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ABSTRACT

An international research team examines California's system of postsecondary and higher education. In particular, the examination seeks answers on how California maintains educational quality, access, and equality while working with the market and the state in developing educational solutions to political, social, and economic problems. Part 1 of the report provides analyses and questions on how the state, in practice, can manage and finance the educational requirements, particularly in the context of the future demographic composition of the state (large inflows of immigrants), that stem from the constant need for highly-qualified manpower that is demanded in a technology-based economy. A bibliography of 50 items is included. Part 2 provides a record of the review meeting within the education committee, including replies to the examiners' questions. Part 3 reproduces a summary of the background report prepared for the review by the California Postsecondary Education Commission titled "Preparing for the Twenty-First Century: A Report on Higher Education in California." (GLR)

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REVIEWS OF
NATIONAL POLICIES
FOR EDUCATION

HIGHER EDUCATION IN CALIFORNIA

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L'ENSEIGNEMENT SUPÉRIEUR
EN CALIFORNIE

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This review of higher education in California has its origins in and is part of the series of enquiries which the OECD is carrying out, under the work programme of its Education Committee, into various aspects of the relationship between higher education systems in its Member countries and their changing social and economic environment.

In this context, American higher education has always been, and continues to be, a major point of reference to most other OECD countries. Given its size and diversity, a review of higher education in the United States as a whole would not have been feasible, hence the focus on one state, California.

Like many OECD countries, California has a large public sector in higher education in which the state dominates policy, but which, unlike many OECD countries, also allows and even fosters lively competition among individual institutions. It also has a very significant private sector, operating independently. California thus illustrates a central question in current policy debate — the mutual adaptation of state planning and market mechanisms in the joint pursuit of equality and excellence.

Dominated by the famous Master Plan of 1960, the Californian higher education system is recognised throughout the OECD world as a bold blueprint for providing widespread post–secondary education while preserving the separate "missions" of the three types of public institution — the 106 community colleges, the State University with its 19 campuses and the University of California with its 9 campuses. It is a plan designed to reconcile populist with elitist institutions, access with success, equality with excellence and the market with the state in developing educational solutions to political, social and economic problems.

How all this works out in practice (particularly in the context of the future demographic composition of the state — with two thousand people from Central America as well as from countries of the Pacific Rim migrating to California every day — and the constant thirst for highly–qualified manpower of a technology–based economy), and how it is going to be managed and financed, provide the analysis and questions contained in the report by the OECD team of examiners, reproduced in Part One of this volume.

A record of the review meeting within the Education Committee, with replies to the examiners' questions, constitutes Part Two of the volume. Part Three reproduces a summary of the background report prepared for the review by the California Postsecondary Education Commission and published under the title *Preparing for the Twenty–First Century: A Report on Higher Education in California.*

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Part One

THE EXAMINERS' REPORT

Chapter 1

CALIFORNIA, AMERICA AND THE FIRST WORLD

> "And then the dispossessed were drawn west — from Kansas, Oklahoma, Texas, New Mexico; from Nevada and Arkansas, families, tribes, dusted out, tractored out. Car–loads, caravans, homeless and hungry; twenty thousand and fifty thousand and a hundred thousand and two hundred thousand. They streamed over the mountains, hungry and restless — restless as ants, scurrying to find work to do — to lift, to push, to pull, to pick, to cut — anything, any burden to bear, for food... ...and the dispossessed, the migrants, flowed into California, two hundred and fifty thousand, and three hundred thousand. Behind them new tractors were going on the land and the tenants were being forced off. And new waves were on the way, new waves of the dispossessed and the homeless..." (Steinbeck, 1939, 1951, pp. 213–214).

"California Here I Come!" In the period between the two World Wars this phrase became a cliché of hopeful journeying into the future, used not only by those who trekked out of the Oklahoma dust bowl in the 1930s but by people all over the western world who believed in the possibility of escape from depression and poverty. California was and remains a symbol of promise, of modernity, of new life, of realizable human prosperity. Hollywood reinforced the myth. European children of the 1930s, 1940s and 1950s imbibed a view of the world in which their everyday experience of an ancient Christian culture was rationalized, on the one hand in schoolrooms by one nationalistic version or another of their collective inheritance from ancient Athens and Jerusalem, and on the other hand projected into the future in dim cinemas from the screens of Metro Goldwyn Meyer. The educational curriculum was always both ancient and modern. Arabic numbers, Latin declensions and post–renaissance science had to be amalgamated with a new image of the American West — an essential, if unremarked because hidden, component of the child's total learning experience.

Californian celluloid portrayed another futuristic world. Just as the Spanish Royal Family erased the negative from its coat of arms, "*Nec Plus Ultra*", at the Straits of Gibraltar in the early sixteenth century[1], signalling that Columbus had discovered "more beyond", so California beckoned millions in the twentieth century to a life in which still more things would be hedonistically possible. Western films were modern morality plays. The past was naively depicted as cowboy heroics, the present as normal in clean, freshly painted suburbs, unbroken and prosperous families and all–American adolescents at high school commencements.

The future was held out against a gleaming technological background as the hope of progress towards unlimited personal fulfilment. All races were jostled together, homogenised by educational programmes of "Americanization" and integrated by a comprehensive, always open offer of educational opportunity, from kindergarten through the twelve grades and on to college and graduate school. Virtue triumphed cinematographically after much travail. Heroes were victorious by dint of individual resolve, women were quietly loyal to family values and decorously

deferential to male pride. Villains were disposed of in the penultimate two minutes of high drama, and the blessed young couple rode off into a Californian sunset. In Great Britain alone in the 1930s, twenty million visits were made every week to "people's palaces" — twenty times the attendance at Matins or Evensong. A new catechism of secular paradise was on daily offer around the globe, centred on a suburb in Southern California.

Such was the childhood of the three examiners in Japan, France and England. It was not, to be sure, our whole world which remained rooted in other native traditions — Buddhist, Christian and humanistic. Nor was the Hollywood culture quite so simplistically optimistic. There was also the comic sadness of Chaplin's burlesque of the powerless urban proletarian, as well as Rose of Sharon's bitter struggle with starvation in the Californian orange groves of John Steinbeck's *The Grapes of Wrath*. We picture "the pictures" of the new world not to romanticise them but to emphasize their influence on a European or Asiatic upbringing as distinct from the narrower experience of formal education, and also to make it clear that the visitor to California typically arrives to a consciousness of déjà vu from early memories of dramatised representation. The task then, as probably from no other corner of the world, is to reconcile observed life to remembered art.

In fact, all three of us had crossed the Atlantic or the Pacific to California before from other regions of the first world. We all had had first–hand experience of the expansion of Californian society, economy and education in the second half of the twentieth century. Most pertinent to remark, perhaps, is that one of us had been one of the three examiners (and rapporteur) of the first, now largely forgotten, OECD exercise in America in 1961–62 — a study of *Higher Education and the Demand for Scientific Manpower in the United States*. We shall return to this convenient starting point when we discuss directly the relation of Californian higher education to the economy. Meanwhile, with respect to America and the first world, we can recall the remark of the 1962 examiners that:

> "There is much worry in high places that shortages will be present in 1970 unless immediate and drastic measures are taken to increase supply [of science and scientists] — shortages which will impair the economic and scientific efficiency of the United States and endanger her political and military role in the world" (OECD, 1963, p. 11).

Nowadays America still leads the first world, albeit challenged in economic strength by a transformed Japan and a slowly resurgent Western Europe. At that time we visited La Jolla to admire magnificent hillsides of volcanic rock, redwoods and the Pacific surf, and the pioneering enthusiasm of sailor oceanographers at the Scripps Institute. Today there is the splendid and spacious campus of the University of California at San Diego. America and the first world have moved on, and California's silicon valley is at its spearhead of technological advance.

California then cannot be taken as representative of America's fifty states. It is the most populous and prosperous of them but contains only one in ten of all Americans, it is highly urbanised (95 per cent live in metropolitan regions), ethnically diverse to the extent that by the year 2000 ethnic minorities will be close to becoming the majority of the population, and wealthy (fourth among the fifty states in per capita income and seventh in median family income). Its people and places are new: 15 per cent of Californians were born in another country and over half in another state. One in eighteen Californians is Asian or Pacific Islander, one in twelve is Black and one in five is Hispanic.

The immigration phenomenon has vast implications for education. California is an extreme example of the tradition of America as a nation of immigrants. One illustration is that Cardinal Richard Curling observed in 1947 that "in all of the American hierarchy, resident in the United States, there is not known to me one bishop, archbishop or cardinal whose father or mother was

a college graduate" (Hennesy, 1981). Today nearly two million Californians are enrolled in institutions of higher education. College–going in some form is the experience of the vast majority.

Alongside an advanced system of education there is also an advanced economy. California boasts the sixth largest of the world's economies. Only the rest of the United States, the USSR, Japan, Germany and France are bigger, while the United Kingdom, Italy, Canada and all other countries are smaller in terms of gross product. To put it sharply, California produces more than the United Kingdom, with half the people.

Thus, California today may be described as the exemplar of "post–industrial society", where new technological industry, especially in the information and communication sectors and in bio–technology, combined with an extensive service sector employing about 70 per cent of the labour force, is able to maintain a society with a remarkably high quality of material life. Economic vitality and social diversity have produced a very low rate of unemployment: less than 5 per cent of the active population. A "national product" ranking sixth in the world involves imports and exports on a global scale, especially with the Asiatic countries which absorb two and a half times more of Californian exports than does Western Europe and seven times more than does Latin America. In the past decade California has gathered no less than 22 per cent of the natural scientists and engineers of the United States. It carries out a quarter of the federally sponsored research and development, and a quarter of the members of the National Academy of Sciences live within its boundaries.

According to the forecasts of the California Economic Development Corporation, this state, by the beginning of the next century, will advance still further on its relative position as an economic leader. In what the Corporation calls an "achievable scenario", income per capita will increase by 50 per cent on the 1986 figure to reach $26 900 a year, while its population will increase by nine million. Even on the least optimistic forecast an income per capita of $18 000 will be achieved, compared with $16 800 in 1986. Research and development expenditure per worker will be multiplied by 2.5 at best and by 1.3 at worst. Poverty, as measured by the proportion of families with an income of less than $10 000, will decrease to 8 per cent from its present level of 10 per cent. This "achievable vision" expresses traditional Californian optimistic vitality with its characteristic expectation of future growth in production and productivity higher than that experienced in the past.

Euphoria is admittedly not universal. There is awareness of possible decline in California's advantages, for example if there were a decrease of military expenditure and a reduction of federal research resources. It is noted that California has recently failed to compete successfully for such federally–funded national scientific centres as the National Center for Earthquake Engineering Research, the Sematec project and the Supercollider. Nevertheless, cheerfulness dominates. It is widely assumed that California can develop its scientific, technological and managerial elites, and reinforce their international outlook and effectiveness. Nor do we have serious reason to doubt the Californian capacity to prosper in the competition for economic growth.

On the other hand, however, we would note that the assumption is also made that California can go on integrating a state composed of numerically increasing ethnic minorities into an occupational structure which is assumed to demand higher and higher levels of education and qualification. Contingent issues of policy accordingly arise. It cannot simply be a question of more education, but rather of how much and what kind of education and training is appropriate for an economy living by advanced technology. It cannot either be simply a problem of educating a technocratic elite, since the whole labour force — and indeed the whole culture of modern society — is involved. And it cannot only be a problem of enlarging access, but also one of ensuring success, a challenge of equality and excellence. Recent Japanese experience has demonstrated how much technological and economic performance depends both on the elite and on a broader base of educated and adaptable labour. Such a labour force seems to be a prerequisite in a world where every

developed country will be in ferocious competition for export markets. The winners will be those who can incorporate rapid advances in new technology and sell effectively in terms of price and quality of product. Appropriate education and training must therefore be a continuous preoccupation of policy–makers.

For Californian competitiveness such rapid acculturation into post–industrial society of a massive influx of people with cultures and languages different from the "White mainstream" surely constitutes a major challenge. Our strong impression is that the Asian minorities in California adjust more easily than others to contemporary conditions. We notice, for example, that at Berkeley the (six–year) graduation rate of those enrolled from Asian families is over 70 per cent and similar to that for the Whites, compared with little more than 40 per cent for the Hispanics and the black students. Perhaps these differences are a warning that the "melting–pot" dynamic, which has worked so well in the formation of Californian society, may reach its limits. It seems possible that some ethnic minorities bring with them traditions and values which enable them to take advantage of Californian opportunity, while others become concentrated by geographical and occupational location in such a way as to be diverted from the mainstream of employment in buoyant sectors of the labour market and to gravitate towards a slough of relative failure in the education system, especially at the primary and secondary levels. Although our task was to evaluate post–secondary education, we were constantly reminded by our Californian informants of grave dysfunctions in the K–12 system (Kindergarten through 12th grade) which result in ethnically unequal recruitment to the higher levels of education, in lower achievement and in discouraging signs of the perpetuation of an underclass[2].

Furthermore, though growth in technological manufacturing and modern service sectors is so impressive and unemployment so low, there still exists in this modern economy a large number of jobs with insecurity of tenure, as is the case in most advanced industrialised countries with their rapid shifts in locations of production and demand for labour. These temporary, part–time, poorly–paid and poorly–regarded positions are occupied by the unqualified and in a disproportionate number by ethnic minorities. Such forms of employment are also of low educative value and draw in people from the social backgrounds which are most resistant to organised educational opportunity, even one as amply provided as that of California. The level of educational development is great, but the challenge also remains difficult and achievement incomplete. Moreover, with an ageing population and the exodus of the well–to–do and the professionally qualified from the cities into the suburban communities, there is a marked tendency towards inner–city concentration of people with low income, low qualifications, and alienated cultures. These melancholy trends could produce a "dual society" with social polarisation, high rates of crime and deviance, and high burdens on the public purse, as well as a negative impact on overall productivity. Educational and social planning to avert such conditions, and to incorporate everyone into the general affluence through the learning opportunities provided by the system, is a distinctive challenge of tomorrow's California.

The anxieties to which we have referred are certainly in the minds of all responsible leaders in California, and form the background of educational debate and social policy. The problem is to know how quickly this awareness and energy can be mobilised to combat the threat of social disintegration. History, of course, offers considerable encouragement. California has been a triumph of incorporation into prosperity for the vast majority. In three generations a motley array of immigrants became Americans, albeit ironically with the help of two world wars as well as an exceptional rate of economic growth. For the future we would agree with the admittedly contentious belief of many Californian policy–makers that the burden of incorporation into a pluralistic society has to rest centrally on the integrative capacity of the education system. It may be today that the high drop–out rate from the secondary schools, especially among some of the ethnic

minorities, is a strategic barrier to fashioning a successful future for California. It may be too that credential inflation (i.e. the raising of the formal educational qualification for entry to a given trade or profession), while perhaps contributing to economic growth, may at the same time threaten social integration. California may be the crucial, and is certainly a fascinating, test case of the capacity of an educational plan to unite a prosperous country.

Conclusion

Why then was California chosen as the focus for another of the OECD's reviews of national policy? It is not because California can be proxy for the United States — none of the fifty states lies at the median point of American economic or educational statistics. California is certainly superabundantly American but not an anonymous representative average. Even less is California a typical OECD territory. It is richer, technologically more advanced, educationally more lavishly endowed, and ethnically more diverse than any other part of the First World. Moreover, it shares only with Japan, Australia and New Zealand a close and complex communication with the developing economy of the Pacific Rim.

The choice of California for the review could have been justified by its special economic and geographical position on the western frontier of the First World: but it was chosen for two quite different additional reasons. First, California offers the convenience, which the United States as a whole does not, of being comparable in scale to most OECD countries. Its 25 million people give it a government and administration of a size and scope somewhere between the smaller OECD countries such as Norway or Greece and the large ones like France or Germany. It is an appropriate choice, therefore, because comparisons are paradoxically only practicable between similar social entities. Second, the purpose of OECD national reviews is to draw lessons as far as possible for other Member countries. California, we hope to show, is an especially apt choice from this point of view, despite the fact that it is not a sovereign state. Like other OECD countries, it has a large public sector of higher education in which the state dominates policy. Yet unlike many Members of the Organisation, it somehow manages to allow and even foster lively competition between individual institutions, partly perhaps through the stimulus of an independent sector, partly through a general disposition towards innovation, partly through preferences for decentralised government and for lay boards alongside the professional bureaucrats. In other words, it seems to us to offer a dramatic illustration of a central question in current policy debate — the adaptation to each other of planning and market mechanisms in the joint pursuit of equality and excellence. It is to this question that we now turn.

NOTES AND REFERENCES

1. Thus, the Pillars of Hercules at the Straits of Gibraltar which had marked Spain as the outer limit of the civilised world now announced *Plus Ultra*: there is more beyond. Francis Bacon then made the Fatal Columns his frontispiece to the *Great Instauration*. See P.B. Medawar, *The Hope of Progress* (London: Wildwood House, 1972), p. 112.
2. We of course appreciate that not all Californians accept this negative view of the primary and secondary schools. Some would insist that significant progress has been made in school reform in recent years. For example, between 1984 and 1987 the number of students taking advanced mathematics increased by more than 50 per cent. A full-scale study of the K–12 system was beyond our remit. Within our terms of reference the major point to be made is that co-operation between schools and post-secondary institutions will be essential to the solution of the problems of access and success that we discuss below.

Chapter 2

PLANNING AND THE MARKET IN HIGHER EDUCATION

We were asked to visit California in pursuit of the established purpose of OECD's national reviews of educational policy. The task is always threefold: to examine the issues of policy–making in education, to understand the relations between education and the economy, and to draw attention to the social consequences of choice between different policy options. Examiners are chosen for these analytical and heuristic labours, we presume, because of knowledge and experience in translating academic study into usable information for administrators and those concerned with the shaping of educational strategies. We must therefore begin by setting out a framework for the analytical description of the political economy of education in California, placing it in the spectrum of relevant countries with varying political and economic histories.

It is appropriate to do so in the context of the first and the second worlds of the northern hemisphere, i.e. within the compass of the first world of OECD countries and the second world of state socialisms; excluding the third world of developing countries but mindful of California's frontier position *vis–à–vis* the labour supply and trading relations with Latin America and the countries of the Pacific Rim.

Our concern is to decipher the policy problems which emerge in advanced industrial societies as they develop their education systems to link families and communities to the complexity of modern labour markets, including the market for scientists and technologists, which was the focus of the OECD review of national policy in the United States in 1962 (OECD, 1963). Now, as then, the problem turns on balancing the use of state and market influences on supply and demand.

We are of course aware that the relation of learning to work in such societies goes beyond the formalities of schooling and qualifications. No visitor to California can be left in any doubt as to the importance of training within industry itself or of the evolving affinity between school and workplace. Put more generally we have to recognise that human skills and learning operate in virtually all social locations in such a way as to make traditional language misleading. Living and learning takes place in both factories and homes and is the experience of both children and adults, men and women. Formal education is but the tip of a vast iceberg conventionally recognised above the surface of learning processes which occur in all social encounters.

Yet our perspective must be still wider. We must recognise that educational policy–makers have to face both the realities and difficulties of preparing each new generation with the skills required by modern international, national and local labour markets, as well as the fostering in universities and colleges of the research base of an advancing technology. Their planning decisions and management practices are, moreover, under the continual, often passionate, judgement of values held by the public concerning the degree of fairness and freedom in the distribution of the immense possibilities which the education system offers. The work of policy–makers carries with it the burdens of limited power but virtually unlimited responsibility for realising a popular dream. They are expected, especially in California, to deliver a future of individual social mobility,

economic security and civilised affluence, and to maintain the supply of professional and scientific skills through institutions which have been shaped by history rather than by their own administration. Policy–makers must also generate the necessary resources under conditions of restricted political funding.

In the Californian case, as we have hinted in Chapter 1, economic and social history has bequeathed a vigorous economy yet a chronic shortfall of high scientific manpower, a diverse ethnicity and spectacular rate of immigration, a strong cultural predisposition towards favouring market solutions to economic problems, and a resolve to curtail the scope of political management from Sacramento. Educationally, however, the past dominates through the famous Master Plan of 1960, which is recognised throughout the OECD world as a bold blueprint for providing universal post–secondary educational opportunity while preserving the separate "missions" of the three types of public institution: the community college, the State University and the University of California. We describe the detail of the structure of higher education in Chapters 3 and 4 below. Here briefly we would refer to it as a plan for reconciling populist with elitist institutions, access with success, equality with excellence, and the market with the state, while developing educational solutions to political and economic problems.

In this context our first step in analysing the political economy is to decide what we mean by education.

Education as Scarcity

Education is valued because it is a scarce good, so that we must expect to find either or both market and political institutions for its distribution. First, education can be a consumption good, as in the case of a resident of San Mateo County going to the community college to learn flower arrangement, when it is mainly of interest to students of culture. If we pay little attention to this aspect of education in this report, it is not that we forget the ultimate aim of Californian or OECD policies generally to raise the quality of popular life. It is because our purpose here is primarily with policies of educational means to this desired end. Second, education can be a production good as when someone takes a degree in dentistry. It then becomes of avid interest to Chicago economists like Theodore Schultz who expounded human capital theory in his famous 1961 paper (Schultz, 1961), or to Soviet state planners like Stanislav Strumilin who in 1924 justified state investment in education by working out its rate of return — he made it eleven times its cost over a lifetime, though with diminishing returns (Kaser, 1986). That there are both social and individual returns to educational investment is an established credo of the modern world, not least in California. The question is how to balance public and private investment decisions and responsibilities. Third, education can be seen as a positional good either in the economist's sense of a screening, sieving or queuing device for selecting and allocating recruits to the labour market, or in the sociologist's sense of a collective negative sum–game with its associated inflationary credentialism and intensified status competition. This third concept is socially of great importance, if only because it is part of the unintended consequences of public policy, not the deliberate result of purposive planning.

Educational Expansion

The dominant empirical fact is that we have lived in a century of expansion. California and the United States have led in the extension of the campus, yet in most countries there are more than twice as many university teachers now as there were students in higher education at the beginning of the century. The people of the OECD countries are distinctly more educationally qualified than

were their parents and grandparents. We have referred to an American example, viz. that no Roman Catholic bishop in that country in the period between the wars had a father who had had a college education. But many successful scientists and businessmen had the same educational antecedents. American expansion of higher education has taken place against a continuing background of immigration from largely uneducated European, Hispanic and Asian populations has continued to the present day, despite the emergence of a new demographic regime of low fertility and high longevity, in America as throughout the advanced industrial world. Moreover, even after the end of the post–war boom which ended in the mid–1970s with the oil crisis, higher education has continued to expand. The alarm over the supply of scientific expertise and technological innovation which was raised in the 1962 education policy review (OECD, 1963) was in the event averted. Or at least it can be said that we have since learned to see such problems as chronic rather than acute.

Certainly in California the management of balance between supply and demand continually exposes the limited power of the Master Plan and the efforts of education policy–makers. The geographical origins of scientists and technologists demonstrate great reliance on the market for imported professionals as distinct from supply through the state's own education system.

Three Political Economies

What kind of system are we then looking at? Is California simply an open educational market? The literature on the political economy of education postulates a spectrum with the pure market at one extreme and the centrally planned command economy at the other. But there are no pure cases. Milton Friedman (1955) justified state intervention in the name of "neighbourhood effects". The USSR has had periods of fee paying for secondary and tertiary education beyond compulsory schooling. The United States in general, and California in particular, ascribe planning and funding responsibilities to the political authorities as well as relying heavily on student loans, private gifts, and the buying and selling of educational products. And private tutoring flourishes as moonlit enterprise in the state socialist countries of Eastern Europe. Nevertheless, for heuristic purposes countries can be spread along the spectrum and fall into three discernible clusters (cf. Teichler, 1984):

i) At the western extreme, Group 1 comprises the two decentralised systems of higher education in Canada and the United States. In the United States, 3 400 degree–granting institutions and the community colleges are, as it were, small–scale capitalist entrepreneurs, subject through market discipline to birth and death — in contrast to their planned European counterparts, who are slower in gestation and even slower to die.

ii) Group 2 is made up of the highly centralised higher education systems of the socialist countries of Eastern Europe where education is a product of manpower planning (Avakov, 1984; Lane, 1985).

iii) Group 3 is that of the Western European social democracies which lie in between. Higher education is mostly publicly financed, but there are varying degrees of centralisation and three more or less developed social markets for students, for research and for graduate labour.

We consider the object of this Examiners' Report and the subsequent review meeting to be an assessment of the experience of Groups 1 and 3. But Group 2, the socialist command economies, completes the picture of theoretical as well as empirical variation in the role of planning and markets in higher education. Planning for educational markets differs in the three groups. In the United States there is high student enrolment and much broad, non–specialised education directed

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towards considerable occupational flexibility. A high adaptability and substitutability between jobs is assumed in an imprecise occupational structure. The preoccupations of the OECD examiners in 1962 (OECD, 1963) notwithstanding, neither at the federal nor state level in the United States have manpower shortages been seen as key problems in the past. Large numbers of retraining programmes, rather than forecasting, control the use of manpower. By contrast, the USSR has an elaborate planning mechanism: long–term and short–term, macro and micro, sectoral by industry, and geographical by region. The European Member countries of OECD, as well perhaps as the Eastern block itself, are in debate as to how far and how advantageously they might move towards the western end of the spectrum. The Californian case emerges into sharp focus in this perspective.

Three Types of Educational Organisation

Three types of formal education correspond to the three types of political economy. At the perfect market end the rate of return approach is used and price signals are relied upon to reveal market imbalances. There is no theoretical need for macro planning. The individual university or college solves its own problems, competing with many other sellers for the favours of a large number of student buyers. Similarly, in the graduate market where the students become sellers, there is competition for jobs under the sovereignty of the employers who buy their skills. Of course, in a proportion of cases the buyers are the colleges and universities themselves. The third market, for research and its applications, is also vigorously competitive. Universities vie with one another for contracts from government and businesses. In all three markets the buyers dominate the character of the product.

At the other end of the spectrum — to which the Soviet Union approximates — the method is manpower planning, and the State determines both demand and supply. Within an elaborate planning apparatus, prices or rather shadow prices are used, but their value as signals or economic levers is part of the planning process, not a substitute for it.

Both systems, one and two, can claim to work. Both the United States and the USSR, from different starting points, have traversed a long journey along the Trowian road to mass higher education (Trow, 1974, 1988), the development of high technological research and the manning of a complex division of labour. American enrolments in higher education have held up at 12.5 million in the past decade, despite a decline in the size of the traditionally relevant age groups. In the USSR, the number of new admissions to higher education rose by 2.3 times between 1955 and 1980, reaching one million at the end of that period (Avakov, 1984).

In between are the mixed systems of the OECD countries of Western Europe. Of them too it may be said that right through the expansion of higher education in the twentieth century the supply of graduates lagged behind demand until, again roughly, the end of the post–war period in the mid–1970s. There is admittedly an important exception: Germany in the 1920s. Between 1925 and 1932 the number of students in German universities rose from 90 000 to 140 000, and 60 000 graduates were out of work. The difficulty was solved in 1933 when the Nazis came to power by a brutal act of state planning: a *numerus clausus* was imposed, annual entry was reduced to 15 000, with only 10 per cent women and no Jews being admitted. Within a few years the graduate market was, in economists' jargon, "cleared".

The social democracies have not found it politically possible to plan so effectively. Yet there are said to be urgent reasons for doing so. Both shortages of specialised technologists and graduate unemployment are among them and are seen as serious problems, the former for example in Japan and the latter in Germany. But there are other reasons which push and pull these countries between the two poles of market and planning strategy. The essential reason is that they are welfare states,

i.e. in their varying circumstances they have sought, in this century, to find a compromise between the claims to equality and fairness rooted in citizenship and between the claims to efficiency, freedom and property rights rooted in class. As T.H. Marshall (1950) said, class and citizenship have been at war in the twentieth century and nowhere more so than in education. Of course, neither has ever won outright victory in any field of public policy. Higher education is an intricate example of the interplay of the forces of citizenship responding to popular political demand and of accommodation to class interests through market strategies. California is unlikely to be excepted from this generalisation. We can, however, ask if its distinctive characteristics have anything to teach the other OECD countries.

Education and Stratification

On a long historical perspective, economies are systems of stratification, and education prepares people for places in the stratified order of production and consumption. In Europe in the eighteenth and nineteenth centuries there were essentially two separate arrangements for the upper and lower strata: for traditional elites, educational institutions such as the German law faculties, the French *grandes écoles*, or the English public schools and ancient universities were vehicles for the preservation, transmission and renewal of the styles of life rather than the occupations of the elevated strata. Primary education was for "workmen and servants". It eventually became free and compulsory. Education in Europe, at least up to the end of the nineteenth century, was a public stamp determined for all but a tiny minority by the circumstances of birth. But in the twentieth century there have been fundamental changes in the formation and function of elites. They have expanded and, especially after the Second World War, have drawn in new recruits of more diverse social origin. In consequence, the traditional, but highly restricted, function of schools and universities as promoters of mobility for the gifted sons (and to an even smaller extent daughters) of the masses has been strengthened, at least temporarily. Meanwhile, elite occupational groups have become more differentiated in their function, less closely knit in their familial and educational origins and connections, and more specialised in their economic and social role and in their knowledge.

It does not follow, however, even in modern California, that advanced industrialism necessarily leads to technocracy or to meritocracy. A similar technological base can support widely different distributions of power and advantage, depending on the historical, political, and cultural conditions of any particular country. Elites may be more or less open. Moreover, established and emergent elites accommodate one another to varying degrees. In the Soviet Union the accommodation seems to have taken the form of control by the political elite over bureaucratic, industrial, and military organisations. In France the technocratic traditions instituted by Napoleon in the *grandes écoles* are closely assimilated to the metropolitan and governing class. In the United Kingdom the amateur and classical traditions of Oxford and Cambridge have hitherto largely contained the expansion of science and technology and subordinated the "expert" to a relatively minor role in government service and industry. We shall look later at the recent development of Californian higher education in this perspective. Meanwhile, it may be noted that some American neo–Marxists still emphasize the role of schooling in the reproduction of the social division of labour. This was the central thesis of Bowles and Gintis (1976). In their view, the essential function of schools is to prepare children for the place in the class structure which their origins have predetermined. The curriculum and ethos of a hierarchy of schools is thus fashioned in parallel to the occupational hierarchy of the wider society.

Bowles and Gintis attributed unequal education to the stratified division of labour under capitalism. They were aware of the hierarchical character of schooling and work in communist

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countries. But they were primarily concerned with the United States, and their work was criticised for identifying hierarchy in school and work with capitalism. In fact, the roots of inequality are spread far beyond private ownership of the means of production to the division of labour itself. Accordingly, it was pointed out that their theory of correspondence, like Bourdieu's theory of cultural capital (Bourdieu and Passeron, 1977), might be more applicable to the Soviet Union than to the United States or France[1].

Further work on the correspondence thesis has been published by the Californian scholars Carnoy and Levin (1985). Its main interest is in its attempt to come to terms with these criticisms and particularly with the historical evidence that the structure of education is determined by democratic politics as well as by the imperatives of economic organisation. In theoretical terms this is a big step away from orthodox Marxism. It questions the primacy of social relations of production in explaining "epiphenomenal" institutions. Nevertheless, Carnoy and Levin postulate contradictory trends towards equality and democracy in education. They argue that the education system in America has two functions: on the one hand it prepares young people for the unequal and authoritarian relations of capitalist production, but on the other it socialises children for citizenship in democratic society. Thus, these authors complicate the original correspondence theory arguing that "the relationship between education and work is dialectical — composed of a perpetual tension between two dynamics, the imperatives of capitalism and those of democracy in all its forms" (Carnoy and Levin, 1985, p. 4).

Education and Social Selection

Public credentials or qualifications are increasingly the mark of modern societies, legitimising inequalities of pay and controlling entry to the labour market. But societies may distribute their opportunities according to many different principles. Primogeniture, for example, was widespread in agrarian societies, the principle being that the first–born has the right of inheritance to a defined occupational position together with the property or monopoly pertaining to it. Some form of inheritance or ascription has been the dominant traditional principle in the whole history of human society. Education under such circumstances reproduces the stratified *status quo*. But modern systems of stratification appear to permit the deliberate use of educational selection to break the traditional tie of birth to occupational destination and instead to foster meritocracy (Bell, 1973; Young, 1958).

Blau and Duncan (1967) interpret the relation between education and occupational achievement in America within the framework of a postulated broad movement from ascription to achievement in the allocation of jobs, and this in turn may derive from a still broader trend from particularistic to universalistic definitions of social roles. The underlying theory is that the division of labour and the demands of efficiency together effectively ensure that there will be public arrangements to test competence before allocating people to positions. Industrialism, from this view, is not so much an economy generating class systems as a catalyst of productive wealth, encouraging openness and providing resources for political redistribution of opportunity.

Industrialism requires, or at least encourages, a more complex division of labour and a more mobile labour force: it gives opportunities to new skills, makes old ones obsolescent, releases knowledge and its acquisition from familial and quasifamilial networks, and above all generates the economic surplus which allows government spending on education.

At the same time, however, industrialism, especially in capitalist countries of the Western European type, generates a class system: with schools and other social organisations that are open in the formal and legal sense, but also restrictive because parents seek to convert their own class

advantages into greater opportunities for their children. In consequence, family and market are pitted against state and bureaucracy in struggles for scarce goods and services, each acting as the agent of principles which, in the end, are contradictory. These political conflicts, set in their background of social stratification, have been much sharpened during the slowing of economic growth in the western countries in the late 1970s and 1980s.

Taking the longer view of development out of classical industrialism in the nineteenth century towards one form or another of post–industrialism in the late twentieth century, modern education systems appear as instruments used by the state in a grand strategy of "class abatement", establishing equality of opportunity irrespective of birth. Is California successful in this strategy? The underlying theory has been that life chances depend upon education, that education controlled by the state can overcome inequalities of social origin, and that above all education can be equalised by expansion. Many modern empirical studies have tried to test this hypothesis (Boudon, 1974; Jencks *et al.*, 1972, 1979; and Halsey *et al.*, 1980). Such studies are concerned with the question of how far political democracy can be successful in overcoming economic inequality.

Boudon (1974), using empirical data from the OECD countries, has demonstrated by a mathematical model the process through which an increase in educational equality can occur without changing and possibly reducing social mobility between classes. Christopher Jencks *et al.* (1972) arrived at similar pessimistic conclusions from data on the experience of individuals in the United States. People with a similar family background, test scores, and schooling scattered themselves subsequently over the range of occupational status and income to about three–quarters the extent of the dispersion of people in general. In that sense, United States society was open. By the same token the scope for social engineering on behalf of a principled allocation of life chances was woefully small. Jencks calculated that schooling explained only 12 per cent of the variance in individual incomes, so that complete equalisation of schooling would at best reduce income inequality by only 12 per cent[2].

The critics rightly complained that to assume it is possible to change the value of one variable without changing the totality of relations between variables in a system of plural causation is statistically convenient but sociologically invalid. If the United States gave everyone the same schooling, it would, in the process, change the class structure, the labour market, and indeed the general shape of society.

In any case the old pessimism remained. Past efforts to equalise through education had been ineffective. Moreover, as Thurow (1981) has argued, these policies were expensive and such effects as they had were to be arrested in the 1980s. In the 1970s in the United States there was an enormous difference in the educational qualifications of the cohorts entering and leaving the labour market. The leavers had experienced the relatively restricted opportunities for schooling available before the Second World War. The entrants were the beneficiaries of expanded opportunity. There was accordingly less scope for education to offset the forces of class and status which produce and maintain inequality. The problem of equality, at least in the United States, is thus likely to turn increasingly on the distribution of market incomes. That was the burden of Jencks's original arguments.

Research on the relation between education and economy over the past two decades has largely, if often tacitly, been conducted as application of the two contending traditions of social and political thought — Liberalism and Marxism. The research outcomes have served both to expose their strengths and weaknesses and to demonstrate modifications in their essential theoretical constructs. The study of schools and labour markets and their interrelations has revealed evidence damaging to both traditional positions, forced many "humanist" Marxists to reconsider the pre–eminence of structure as against agency, compelled many liberals to acknowledge the stubborn

power of ascriptive forces in class, race and gender and challenged both in their respective versions of a "logic of industrialism" with its underlying historicist assumptions. From recent quantitative studies of employment and mobility, John Goldthorpe (1986) has concluded that neither type of theory concerning long–term change in the class stratification of advanced western societies stands up successfully to empirical testing and that "the claims of both must now in fact be seen as in major respects invalid". The theoretical error is historicism and particularly the hope of "theorising" the movement of history.

Out of the research evidence has come renewed justification of the liberal idea of voluntarism and renewed discrediting of the Marxist view that history is made "behind men's backs". But the same body of evidence also reaffirms the weakness of theories of progress towards collective prosperity, social openness and individual freedom through the combination of educational expansion and technological innovation in industry so confidently proposed by the Victorian Alfred Marshall and his liberal descendants in economics and sociology (Marshall, 1872; Kerr, 1960, 1973, 1983; Bell, 1973).

Liberal Utopia and Marxist Doom

The significance of education in the political economy of modern society differs sharply in liberal and in Marxist theories: for liberals it is central to the determination of both production and distribution; for Marxists it is a dependent variable about which Marx himself wrote little. In more recent writing the contrast continues, mainly because of opposed interpretations of the changes in the structure of employment, and the incidence of social mobility, both of which entail theories of the relation between education and employment.

In liberal theory the development of industrial and post–industrial societies involves a progressive upgrading of the skills demanded in the economy (both high scientific manpower and technological culture). The structure of employment shifts with advancing technology from unskilled manual labour to diverse non–manual professional and managerial jobs, requiring ever more elaborate education and training. This upward movement accompanies the shift of modernising economies from primary to secondary to tertiary sectors of production — i.e. from agriculture to manufacture to services — reinforcing the demand for skilled labour, professionals and managers, and from private to public sector activity. The vast movement of educational expansion is partly explained in terms of burgeoning economic demand; and in the human capital theory applied to third world planning (Schultz, 1961), the expansion of schooling came to be seen as a process whereby supply could be expected to create its own demand.

The Marxist view is completely contrary. Instead of upgrading there is degrading. In his *Labour and Monopoly Capitalism*, Braverman (1974) argued that capitalist society, with its scientific management in the service of exploitation of the proletariat, systematically involves the degradation of employment. The labour process from this view must be simplified and de–skilled to satisfy the employers' need for both productive efficiency and the social control of workers. The agenda for education is accordingly different. Whereas for liberals the shape, direction and pace of educational expansion is problematic, for Marxists the focus is on the internal stratification of education systems in capitalist societies and on the anticipatory socialisation of workers' children for their ascribed proletarian role in the discipline of industry[3].

As Goldthorpe (1986) has insisted, the research evidence concerning the structure of employment effectively negates Braverman's labour process theory and leaves the liberal problematic of expansion as a serious one. Moreover, Marxist views concerning social mobility leave little room for consideration of the well–documented patterns of upward mobility through education which

have been a prominent feature of the link of education to occupation and class in the twentieth century.

Nevertheless, the liberal theories of meritocracy and the movement from ascription to achievement are not in themselves confirmed by the disconfirmation of Marxist belief in the degradation of labour and the unimportance of mobility. The research evidence certainly shows a great deal of movement, including intergenerational movement through education, as the structure of employment in advanced societies (and earlier in the century the differential fertility of class groupings) enlarged opportunities in the professional, managerial and technical occupations. But structural mobility has to be distinguished from exchange mobility, for it is the latter, measured in relative terms, which denotes the degree of openness of a society. The evidence is disputed but certainly cannot be held to support the optimistic theories commonly advanced by liberals (Halsey, 1977)[4].

Liberal cheerfulness concerning upgrading towards universal, middle–class, professional society cannot plausibly accommodate the re–emergence of widespread unemployment in the First World capitalist countries. Since the end of the post–war period in the mid–1970s, few such countries (Sweden, Switzerland and Japan are among the significant exceptions) have managed to keep their unemployment rate below 10 per cent. Moreover, unemployment is heavily concentrated among the young disadvantaged ethnic minorities, the educationally unsuccessful and those previously employed in manual work.

At the same time, the structure of employment has become differentiated in ways which have led some analysts to characterise labour markets as dual, or primary and secondary. This duality is especially relevant to understanding the flow of immigrants into California, but it is not necessary to accept dual labour market theories in order to recognise the importance of the increase in the number of insecure, part–time and temporary jobs, with their precarious conditions of service, as a conspicuous feature of modern free–enterprise economies. No one knows for sure whether such "flexible work" arrangements will stay as permanent features or even as prerequisites of new forms of full employment in the future. They certainly will provide flexibility for employers as an important item in the management of labour relations; but they will also contribute to more freedom for employees in organising their lives. Nonetheless, they might stay as a feature of work life for the less qualified. They also seem to develop in socialist countries along with the development of market flexibility in production, prices and wages.

It is necessary, however, to discard any notion of mechanical upgrading of skills, security of tenure in occupations, and equalisation of income and lifestyle around middle–class norms under modern conditions of market fluctuation and the pressed strategy of employers to seek a flexible workforce. Indeed, the phenomenon of labour market uncertainty in a less than full employment economy is so far damaging to liberal optimism as to generate new analysis of polarisation in class structures, including the identification of an emerging so–called "underclass". This stratum, insofar as it exists, presents urgent problems for any theory, liberal or Marxist, of the relation between education and employment, since the typical recruit seems to be a young person with a background of school failure who lacks the motive, the skills, the qualifications, and the traits of personality to enter successfully into the formal economy. Research on the underclass to describe empirically its characteristics and prevalence is not yet adequate but has begun in the late 1980s[5]. It is likely, however, to undermine further the Marxist theory of an enlarging and homogenised working class as well as the liberal dream of a classless society of skilled workers.

Citizenship, Education and Employment

The phenomenon of an emergent underclass with its parallel of "infantilism" among young people in the communist countries of Eastern Europe (Gospodinov, 1986, p. 12)[6] illustrates the more general differences between liberals and Marxists in their conception of the state and the family. The liberal nostrum of advance towards an affluent, free and equal society accorded a political as well as an economic role to education. In Alfred Marshall's classic formulation, the transition from an economy of low technology, long hours of work and low wages to one of high technology, short hours and high pay would eliminate the working class by making all its members gentlemen (and presumably gentlewomen), at least by occupation. The new economy would thereby enable workers to extend their interests andenergies in undertaking responsible self–government in parliaments, local councils, trade unions and producer co–operatives (Marshall, 1872). Education was destined, in other words, to bring up enlightened citizens as well as efficient and skilled workers. It was precisely this utopian vision of an elevated combination of politics and economy — a prosperous democracy — that justified state "interference" in the private lives of families to compel the freedom of school attendance and provide educational opportunity. The subsequent official history of ministries of education in western countries, and indeed in much of the Third World, is characteristically celebrated in these liberal terms.

But the underclass and the demonstration through social research of limits on exchange mobility, the elusiveness of meritocracy, the persistence of class difference in educability, and the continuance of, albeit classless, inequality of income and status have been factors generating pessimism rather than optimism in the liberal camp. Jencks' *Inequality* called in question the whole project of social transformation through educational policy. In America and Western Europe the combined impact of liberal pessimism and aggressive Marxism resulted, in the late 1970s and early 1980s, in widespread retreat by governments from the previous belief in the efficacy of educational expansion either as profitable economic investment or benign political socialisation.

The reaction was, of course, exaggerated but the curve of educational expenditure as a proportion of GDP became flattened in many countries, enrolments beyond school slowed their rate of growth, private education gained at the expense of state provision, and resources were transferred to forms of training held to be relevant to the solution to rising youth unemployment.

Whatever these theoretical controversies and shifts of policy, one fundamental feature is indisputable: there is ample research evidence from most countries that education and occupational level are strongly correlated — the thesis of a tightening bond between education and occupation is securely established[7].

Higher Education as a Positional Good

Finally, in this analytical chapter it is appropriate to emphasize the conception of education as a positional good (Hirsch, 1976). Expansion has been the dominant feature of the post–war period in all the three groups of countries that we have identified. Absorption of the qualified has been partly through relative increase in middle–class occupations and partly through "graduatisation" of a wider range of occupations. But the correlate has been intensified competition for access and there is evidence of a status reconstruction of higher education.

The sociological interpretation of these developments is that the supply of this positional good has been increased by institutional differentiation such that the advantaged strata have secured relatively more places for their children in the more prestigious institutions of an elongating

hierarchy of universities and colleges. Thus, Paul Windolf (1985), the German sociologist, has shown a trend during the expansive 1960s and 1970s towards on the one hand relatively higher rates of expansion at the lower levels — for example, the *Fachhochschulen* in Germany, community colleges inthe United States or the *Instituts universitaires de technologie* (IUTs) in France — and on the other hand an increase in concentration of students of advantaged class origin in the Harvards and Stanfords, the *grandes écoles*, the Japanese former Imperial universities and the German faculties with a *numerus clausus*. More generally, in all countries the employment strategies of parents for their children, and of the more able students, lead them to apply in priority to selective schools or within non–selective universities, to specific programmes where entry is restricted, or to private schools offering short–term specialised professional programmes. This creates a bias in the long–term allocation of human resources, and deprives some fields of knowledge of their needed intellectual capacities. In such ways is "positionality" transmitted to the next generation of market entrants. If further empirical enquiry confirms this polarising tendency, the hope for increased openness by university expansion (Hout, 1987) will not be confirmed.

We cannot expect to offer from a short visit to California any definitive solutions to these large contemporary questions. We can, however, describe what we have seen as a leading example in the OECD world of a remarkable technologically based economic development: a higher education determined to serve that economy through a public policy offering maximal educational opportunity to all its people, native and immigrant, within the framework of a comprehensive state plan. We or our readers could, to be sure, decide that the Californian dream is but a dream; or at least that such utopian shores could never be reached in an educational vessel. But, even so, the pessimist could still profitably contemplate whether some real systems of education foster equality at the expense of excellence or vice versa. Most particularly, it can usefully be asked whether the Californian experience is a model for policy–makers elsewhere who would seek a practical compromise between the claims of populism and elitism through a combination of political and market influences on competing educational enterprises.

NOTES AND REFERENCES

1. "Where for example is the relationship between the economy and the schools less mediated than in the USSR which has an explicit policy of manpower planning? Similarly, where is the correspondence principle more clearly exemplified than in the changes of educational policy that follow from changes in production strategies in a revolutionary socialist society such as Cuba? And where does cultural capital play a greater role in the transmission of inequality than in those societies that have abolished private ownership of the means of production? In short, whether one refers to the subordination of schools to the economy or to the cultural reproduction function of the educational system, much of the analysis of radical educational researchers is at least as applicable to socialist societies as it is to the capitalist countries upon which they focus their attention" (Karabel and Halsey, 1977).

2. In his later publication, *Who Gets Ahead?* (1979), Jencks reassessed the determinants of economic success in America and concluded that family of origin, schooling, measured intelligence, and personality put a heavier, and "luck" a lighter, stamp on a man's economic prospects than readers of *Inequality* (Jencks *et al.*, 1972) had been invited to believe.

   The earlier figure for the percentage of variance in occupational status explained by family background was 32; the new figure was 48. The old figure for schooling was 42 per cent; the new was 55 per cent. Combining the variables of family background, test scores, years of schooling, and personality traits, it

now appeared that the characteristics which people took into the market on first entry explained 55 to 60 per cent of variance in adult occupational status and 33 to 41 per cent of variance in annual earnings.

Thus, the general thrust of the *Inequality* argument was not blocked by recalculation. For example, whereas in *Inequality* the anticipated difference between the occupational status of brothers was 82 per cent of that expected between pairs of unrelated men, the new percentage was 72. Clearly, the revised figure did not afford dramatically enlarged scope to the social engineers.

3. Thus, at the centre of the liberal literature is Martin Trow's (1974) theory of stages of expansion from elite through mass to universal higher education, and Dan Bell's (1973) characterisation of the university as the gatekeeper to occupational placement, while at the centre of Marxist analysis is Bowles' and Gintis' (1976) correspondence theory of the regime of control of schools and workplaces, and the French structuralist Bourdieu's (1977) theory of cultural capital explaining class differences in educational success and certification.

4. In an interesting new analysis of mobility in the United States, Michael Hout (1987) puts optimistic emphasis on the random relation between social origins and occupational destinations of American graduates. But more evidence is required before the new version of social openness through educational expansion can be accepted. See our remarks on polarisation below.

5. A significant funding of research on the underclass in America has recently been announced by the Russell Sage Foundation (see their *Reporting*, No. 10, May 1987).

6. The author reports that: "At a seminar held in 1983 in Moscow, organized by the Institute of International Workers' Movement at the Academy of Sciences of the USSR and the European (Vienna) Coordination Centre for Research and Documentation in Social Sciences, scientists from the capitalist countries commented on a particular "cultural mutation" expressed in the fact that labour is no longer on the top rank in the value structure of contemporary youth. It would be erroneous to suppose that these problems do not concern socialist countries, whereas experts have noted, due to prolongation of the education period and isolation of the educational process from acquisition of habits of work, tendencies of decreased interest in labour are observed among certain groups of youth."

7. The strongest *beta* coefficient in path diagrams analysing the determinants of occupational position, since Blau and Duncan's analysis of American occupational structure in 1967, has been consistently drawn from respondent's education to job as distinct from father's or mother's education or job or any other background variable (Blau and Duncan, 1967; Halsey, Heath and Ridge, 1980). More recent evidence from British studies (Payne, 1985, 1987; Junanker, 1988; Payne and Payne, 1985) also demonstrates that school qualifications have improved the chances of avoiding unemployment in the period of economic recession from 1974 to 1981, that as youth unemployment and overall levels of certification have grown, so have the differences between job chances of the qualified and the unqualified (Payne and Payne, 1985). In France a number of studies from INSEE confirm the same conclusion for still more recent periods. It does pay to stay on at school. And more generally, apropos the emerging underclass, Joan Payne has used data from the British 1980 and 1981 General Household Surveys to show that the young unemployed are three times more likely than their employed peers to have parents or brothers or sisters who are also out of work. The reasons are complex, including variations in local labour markets, and residence in particularly deprived inner city or corporation estates (Payne, 1987), but there is also a tendency for unemployment to run in families — another facet of the survival of ascription in an achievement society.

Chapter 3

THE NATIONAL BACKGROUND OF HIGHER EDUCATION

The Background of Higher Education

A first comparative view of Californian post–secondary education may be had by considering some simple arithmetic on the American achievement in relation to the three other OECD countries from which we came as examiners in 1988. They are set out in Table 3.1 below:

Table 3.1. **Comparative Post-Secondary Statistics**

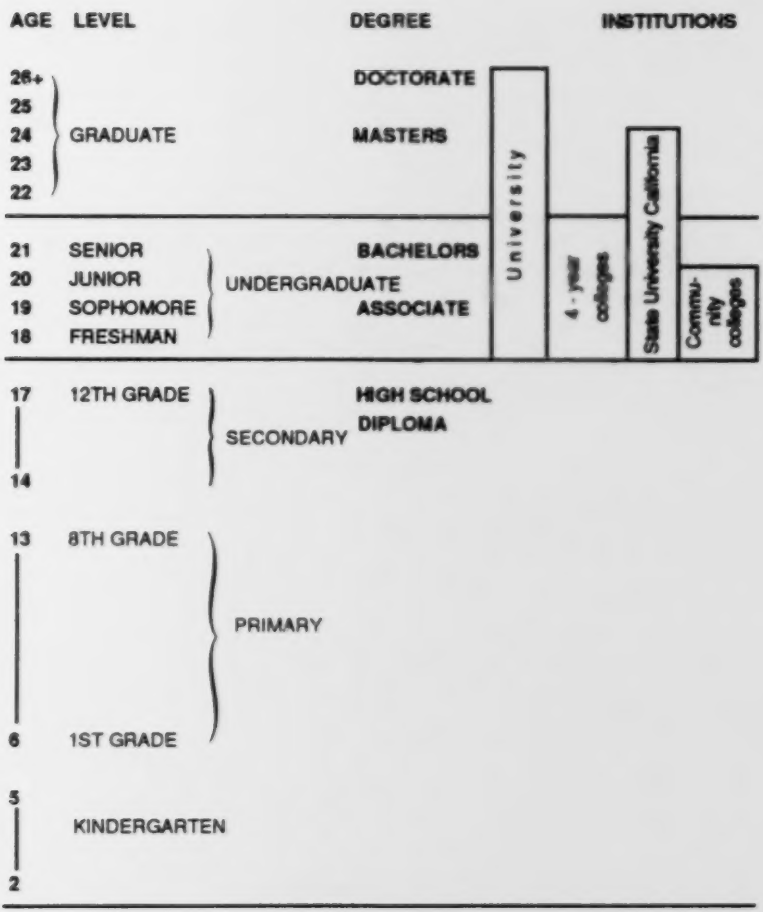
Per cent

	United States	Japan	France	United Kingdom
Graduates from secondary schools (1985)[a]	78.0	87.5[b]	30.4	36.7[c]
New entrants into higher education (1985/86)[d]	64.4	33.2	33.0	27.6[e]
Graduates with a first university degree (1985/86)[f]	24.3	23.5	15.4	14.4[e]
Graduates with a diploma below the first university degree (1985/86)[f]	12.3	10.8	13.2	11.8[e]

a) Proportion of the age groups concerned who obtain secondary school qualifications allowing access to higher education.
b) 1986.
c) School-leavers with at least 5 A-C awards at GCE O-level or equivalent or a non-advanced further education qualification.
d) Proportion of the same group as *a)* entering all institutions of higher or post-secondary education.
e) 1984/85.
f) Proportion of the relevant age group obtaining a higher education qualification.
Source: OECD data bank.

We thus bring a combined perspective from two European countries with highly selective secondary schooling, and one Asian country which has recently and rapidly assimilated to and even surpassed the American model of universal secondary education. American higher education remains the largest in proportionate scale for three reasons: it rests on an unselective secondary education from which a high school diploma qualifies for access; its modal age of entry is 18, whereas many European countries provide for 18 and even some 19 year–olds in secondary schools (Table 3.3); and it enrols a large proportion of adults or "mature" students.

Figure 3.1. **THE UNITED STATES SYSTEM OF EDUCATION (California)**



Note: Most students in the above age groups are to be found in the institutions indicated. But all post-secondary institutions, especially community colleges and state universities, also recruit from outside the traditional age ranges .

Table 3.2. Carnegie Classification of Institutions of Higher Education

Classification	Number of institutions			Per cent (and enrolments in thousands)		
	1970	1976	1987	1970	1976	1987
Research university I[a]	52	51	70	1.6 (12.9)	1.7 (10.2)	2.1 (12.8)
Research university II[a]	40	47	33	1.4 (7.2)	1.5 (7.2)	1.0 (5.0)
Doctorate-granting university I[b]	53	56	51	1.9 (7.5)	1.8 (7.2)	1.5 (5.3)
Doctorate-granting university II[b]	28	30	59	1.0 (3.8)	1.0 (2.7)	1.7 (4.6)
Comprehensive institutions I[c]	323	381	427	11.4 (21.8)	12.4 (23.5)	12.5 (24.1)
Comprehensive institutions II[c]	133	213	174	4.7 (4.7)	6.9 (4.9)	5.1 (2.7)
Liberal Arts colleges I[d]	146	123	125	5.1 (2.2)	4.0 (1.4)	3.7 (1.5)
Liberal Arts colleges II[d]	575	460	439	20.3 (5.9)	15.0 (3.4)	12.9 (3.2)
Two-year institutions	1 063	1 146	1 368	37.5 (27.5)	37.3 (35.6)	40.4 (36.7)
Specialised institutions	424	559	643	14.9 (3.4)	18.2 (3.7)	19.0 (3.8)
Total	**2 837**	**3 072**	**3 389**			

a) In addition to a full range of baccalaurate programmes, *research universities* give high priority to research and graduate programmes, and award at leat 50 Ph.Ds annually. The difference between Class I and Class II lies in the amount of federal support for R&D received annually.

b) *Doctorate-granting institutions* do not emphasize research and graduate programmes as much as research universities. The distinction between Class I and Class II lies in the number and disciplinary distribution of Ph.D. degrees awarded annually.

c) *Comprehensive institutions* offer graduate programmes only through the Master's level, and, in addition, award more than half of their baccalaureate degrees in ocupational or professional fields. The difference between Class I and Class II is wholly one of size (Class II institutions enrol less than 2 500 students).

d) *Liberal Arts colleges* are primarily undergraduate in orientation and award more than half their degrees in arts and sciences fields. The principal difference between Class I and Class II is selectivity.

The system of post–secondary education in the United States is schematically represented in Figure 3.1. It has not changed in its fundamental structure since the OECD visit of 1962. But the flow through and the output from the system has markedly increased. It is even clearer now than it was then that educational opportunity is, in principle, lifelong — from the kindergarten to the quarternary post–doctoral institution or the adult education class of a community college: it is normal in most of the states to attend through twelve years from the first to the twelfth grade (age 6 to 18), and its voluntary extensions in some form and to some extent incorporate three–quarters of the population.

In 1960/61 the American four–year degree–granting institutions and what were then called the junior colleges, offering at least two years but less than four years of work with degree–credit programmes creditable for transfer to four–year institutions, totalled 1 975 with an enrolment of 3 600 000. By 1970 the number of such institutions had risen to 2 900 and today it is 3 400, enrolling twelve and a quarter million students. The growth of post–secondary institutions, classified by the more elaborate Carnegie scheme, is shown from 1970 in Table 3.2.

It may also be seen from Table 3.2 that the two–year institutions or community colleges have come to occupy a larger space in the American system. These colleges were always most heavily

concentrated in California and the Far Western states and are now, as we shall see below, the foundation of the post–secondary structure.

Beyond the community colleges are the higher degree–granting institutions. As Clifford Adelman observes, "the modal paradigm of four–year college enrolment in the U.S. is a public comprehensive institution of low to moderate selectivity. Basically, that is where America goes to college...The typical U.S. college student can now be described as a Business Administration major in a state college (equals state university in California). This individual ranked in the second quartile of his or her high school class and scored between 800–900 (combined) on the SAT [Scholastic Aptitude Test]" (Adelman, 1987, p. 5 and p. 3).

But around the average is scattered an array of institutions and individuals of considerable variety. The quality of American institutions of higher education varies greatly; and this variation of both mission and selectivity is reflected in the Carnegie classification used in Table 3.2. The major organisation of education for high–level professional manpower is constituted by the 213 institutions which grant doctoral degrees. Among these, the 70 research universities in Class I, enrolling about one–eighth of all students, dominate the scene to the extent of granting the majority of the doctoral degrees and constituting the main centres of academic research. The 1962 examiners observed of American graduate education what is still true in the 1980s, that "the extent to which quality is concentrated in a small number of nationally known and nationally recruiting graduate institutions is a marked feature of the system". As to California, it may be recalled that a study collating judgements of universities' department chairmen to produce an overall ranking of institutions in 1957 placed the University of California (Berkeley) second in the hierarchy. Today the private university — Stanford — is also included in the top ten institutions.

Taken as a whole, the American post–secondary schools and colleges form a vigorous collectivity, more anthropologically systematic than politically unified. In the OECD Examiners' Report of 1962 (p. 23) doubt was expressed as to whether these arrangements could properly be called a system. There was, for example, no powerful centralising and unifying force comparable with that in France or the Soviet Union or the United Kingdom. Instead, the examiners noted, there was competition between many different state and private ventures which had, in the past at least, served America well. At the same time, federal involvement was growing rapidly. The question, in the minds of the examiners, was whether the solution of the approaching manpower crisis which they had identified, and the further advance of the United States towards mass or even universal higher education, would not require more explicit organising action by state and federal agencies.

From this point of view the examiners particularly noted the development plans which had appeared in California in 1960. To the OECD examiners the Master Plan seemed to represent the most advanced effort through state action to organise mass higher education for a tripling enrolment by 1975 while maintaining a quality of research and education at the top which was unsurpassed anywhere among OECD countries and probably in the world. The mass base was to be provided for by the development of junior colleges with transfer arrangements to the university and the state colleges in the upper division (i.e. after two years of undergraduate study). The state colleges (later the state university campuses) represented more selective admission by restricting their intake to the top one–third of the graduates of Californian public high schools, and the University of California was to cater for the top one–eighth. Thus, the three tiers would guarantee tuition–free access to higher education for all Californian high school graduates and, at the same time, exercise a division of function according to student quality. Meanwhile, the contribution of private institutions was not ignored but the emphasis was put on an emerging structural framework provided by the state which the examiners thought might well be the appropriate model for higher education in a society based on the culture of science and technology.

In the following quarter of a century both Washington and the state capitals have moved somewhat towards Sacramento. There has been greater federal and state involvement with research funding, student support, quality of teaching, and co–ordination of educational effort, all with awareness of the need to foster a flexible response to economic needs. Yet history has not been wholly kind to the OECD forecast of greater state intervention. The emphasis now would be put on complementarity and partnership between the public and the private sector, forming a system highly responsive to market forces in both state and independent institutions. This collaborative network is of long lineage. Indeed, contemporary observers like Martin Trow and Sheldon Rothblatt would characterise the American national system and its Californian variant as having put in place by the end of the nineteenth century a structure which turned out to be strong enough to permit the staggering growth of the twentieth century.

At the beginning of the century, when only four in every hundred Americans of college age were actually attending college, the structural characteristics of American higher education were already established. They included the "lay" board of trustees, the strong president and his administrative staff, the well defined structure of faculty ranks, and, in the selective institutions, promotion through academic reputation linked to publication and a readiness to move from institution to institution in pursuit of a career. On the side of the curriculum the elective system, the modular course, credit accumulation and transfer based on the transcript of grades, all were in place by 1900, as were the academic departments covering all known spheres of knowledge, and some not so well known. Underpinning all was the spirit of competition, institutional diversity, responsiveness to markets (especially to the market for students) and institutional autonomy marked by strong leadership and a diversity of sources of support. "The United States already had the organizational and structural framework for a system of mass higher education long before it had mass enrolments. All that was needed was growth." (Trow, 1988).

Ten Characteristics of American Higher Education

Professor Trow has pointed to ten distinctive features of American higher education. First, *belief in the desirability of post–secondary education* for almost everybody is central to the modern American credo. In consequence, the size of the American higher education system is primarily determined by market demand for post–secondary education and, in that sense, is not dependent on central government planning or policy. Popular sentiment supports a system which remains much larger and more diverse than anywhere else among the OECD countries, despite the worldwide post–war growth of higher education. About three–quarters of young Americans finish high school, about two–thirds of these go on to some kind of college education and, according to Clifford Adelman's analysis of subsequent records of high school graduates of 1972, about a third had earned a Bachelor's degree by 1984 (Adelman, 1987, p. 31, Table 11).

Martin Trow secondly emphasizes *the importance of the private sector*. While admittedly three–quarters of American post–secondary students are involved in public institutions, the private sector, as in Japan, has a crucially important function. Thus, of the ten leading research universities eight are private and many of the best undergraduate four–year colleges are also private institutions. A contrast may therefore be drawn with the European OECD countries in which state institutions dominate markedly. And, as we shall see, the private sector is also a much more important source of funding in America compared with Europe. It should also be added as a characteristic of the American colleges that they all typically work on a mixture of public and private funds.

Trow's third emphasis is on the place of *general education* in the undergraduate curriculum, as contrasted with the more specialised degrees commonly found in Europe which are oriented to

professional and pre–professional training. As we noted in Chapter 2, the American system tends to defer specialised vocational training to the late stages of formal education, and indeed to special short courses within an individual's occupational career, which generally involves collaboration between educational and industrial enterprises.

The fourth Trowian distinctive characteristic of the American system is *the modular course* with its attached credits and the acquiring of qualifications by accumulation, as distinct from, for example, the British system of final examination. The unit credit is the currency of American higher education. It links separate colleges and universities into a unified but diverse network. In consequence, flexibility of transfer between institutions and between fields of study is relatively easy for Americans, compared with Europeans. It should, however, be noted that "national diplomas" exist, for example in France which also makes extensive use of a credit system *(unités de valeur)*.

Fifth, the structure of the academic profession in the United States is different from the normal European arrangement in that *the academic ranks are less hierarchical* and the entrant expects to become a full professor in due time in one institution or another. The hierarchy is one of institutional repute rather than individual rank. There is therefore less division within the ranks.

Sixth, the typical governance of American colleges and universities differs from that of continental Europe. European administration typically centres on a metropolitan ministry, whereas the United States has *no federal ministry of education* and Washington plays a fairly small role, except for its programme of student loans and grants.

Seventh, *the president of an American college is a relatively powerful figure*, being both the administrative and academic head, accountable only to the lay board of trustees.

Eighth, this lay board also ensures in America *a strong accountability to the local regional or national constituencies* which support higher education in American society at large. In Europe, by contrast, accountability to the wider society tends to be indirect, through the central ministry of education which can and often does play a more *dirigiste* role and, to a lesser degree but increasingly, to scientific foundations, professional organisations, enterprises, or local authorities which provide earmarked or general financial resources. Bureaucracy thus buffers popular power in European higher education, whereas in America, alumni, patrons, parents and students constitute a powerful constituency in support of educational expansion and diversification.

Ninth, *the community colleges*, in Trow's view, are more firmly *part of the higher education system* in America than in Europe where there is a separate set of diverse non–degree–granting institutions offering vocational and technical courses. The difference in firmness of integration is arguable but most would agree that the American community colleges do afford increased flexibility of transfer from one institution to another, and give a shared sense of a unified structure of diverse educational opportunities.

Finally, Trow emphasizes that the American college embodies a *spirit of service* to "almost any organized interest that asks for it". The educational constituency is the society, not the state. America, he argues, has a market for its educational products which is hospitable to all and not simply the servant of government. Graduates readily envisage careers in private enterprise and not only in public service. Research and expertise are offered widely to private interests. Patronage and support are accordingly more widely and more plurally based. The system is consequently more populist, less "elite" and therefore more expanded and more securely supported. It is true, as Trow himself points out, that the comparisons can be misleading and, we would say, frequently overdrawn. For example, we saw 18 year–olds in a community college struggling with those elementary quadratic equations which would have been mastered by boys and girls in an English grammar school or a French *lycée* at age 13.

There is some truth in the European prejudice that America lacks a secondary education system preparatory to the universities as traditionally defined. American colleges undertake a number of functions which in Europe are assigned to the secondary schools. Thus, whereas a majority of 18 and 19 year–old students in America are enrolled in higher education, in European countries young people at this schooling stage are to be found predominantly at the secondary level (Table 3.3).

Table 3.3. **Enrolment Rates of 18 and 19 year-olds by Level of Education (1984/85)**

	18 year-olds			19 year-olds		
	Secondary education[a]	Higher education	Total	Secondary education[a]	Higher education	Total
United States	18.0	40.7	58.7	4.4	40.1	44.5
France	38.2	14.0	52.2	14.1	20.8	34.9
Germany	79.3	2.2	81.5	45.8	7.0	52.8
Netherlands	49.7	8.0	57.7	26.3	14.2	40.5
United Kingdom	21.0	11.6	32.6	9.1[b]	17.0[b]	26.1

a) Full-time and part-time secondary education.
b) 19 and 20 year-olds.
Source: OECD data bank.

No figures are available for Japan but other statistics show that in this country — even more than in the United States — the large majority of 18 and 19 year–old students are enrolled in higher education.

The American post–secondary system undertakes perforce to remedy what in Germany, France or Great Britain would be assumed to be preparatory learning for those who enter higher education. In British terms the statistics for "further" and "higher" education are confounded. Certainly, "remedial" education is taken for granted as part of the mission not only of community colleges but of the lower division of such world famous universities as the University of California, Los Angeles (UCLA) or the University of Southern California (USC).

The comparisons, moreover, are dangerous precisely because the American system is so commodiously inclusive of all educational demand for people beyond secondary school age. In the European history of educational development, what the British call "further education" has been institutionally separated from the narrow path to a baccalaureate degree. Thus, there are 1.3 million further education students in Great Britain, many of whom would be defined as students in higher education if the structure were Californian or American. In France, meanwhile, the law stipulates contributions to *l'éducation permanente* by all universities as a normal responsibility of each institution: special financial arrangements offer incentives to universities to take a substantial share of adult education, and the proportion of students partly employed is increasing.

Furthermore, in both the American and the European cases, we must remind ourselves of the existence of many short courses which do not lead to formal degree qualifications. These are offered by private or proprietary colleges and institutes that are not recognised by public accrediting bodies but which play an essential role in attuning educational supply to occupational demand throughout the advanced industrial world. The point here, however, is that such arrangements are

especially proliferated in America. Accordingly, the generalisation remains that the Californian variant of American inclusiveness makes reasonable claim to be the most effective and certainly the most extensive apparatus of opportunity for the unlearned of any age to qualify themselves for the elaborate and shifting demands of the labour market.

European Elitism and Californian Populism

In the most general terms, then, the Californian Master Plan and its revisions can be interpreted as a distinctive attempt to reconcile populism with elitism. This plan for the combination of equality with excellence meant in effect that in 1960, logic was superimposed on history: and history was largely inherited from Europe as modified by the political and economic development of the United States. The forces of populism had expressed themselves as an upthrust of educational expansion from the original neighbourhood schools towards open–access community colleges and towards the development of normal schools for teacher training. Elitism, on the other hand, was represented by the development of the University of California (which was largely dependent on private funds in its nineteenth century beginnings) and the private four–year colleges. The task was to integrate both populist and elitist forces into one system. It was a task much facilitated by the land grant movement supporting public institutions which provided training in the mechanical arts and agriculture. State finance quickly followed initial private bequests.

In Europe the integration struggle in this period was at the secondary level, and the outcome was the comprehensive school. In California and the United States it was focused at the post–secondary level, and the outcome was the Master Plan. Thus, California emerged with a tripartite public post–secondary system. Its characteristics were open access, a place in college for everyone, and arrangements for transfer from one institution to another. But at the same time there was a differentiation of funding and governance, the details of which reflect the binary origins of the system and in which the California State University emerged as a hybrid. Adumbrating our closer analysis in Chapter 4 below, we note that the University of California has regents serving for twelve years, is constitutionally autonomous, has a block grant, a monopoly of the right to grant the doctorate, and a licence to recruit from the top one–eighth of high school graduates. The state universities have trustees that serve for eight years, have a line by line budget, are largely confined to bachelors and masters degrees, and recruit from the top one–third of high school graduates. The community colleges have governors who serve for four years, have detailed budgetary control, no state research funds and a mission confined to the first two years of undergraduate work or what is sometimes called the fourteenth grade.

Is this public system one of integration or a legislated mandate for unequal division? As examiners we are inclined to answer that it is both, and to believe that the plan and its revisions represent a continuing compromise which is probably more effective than those found in Europe in the search for an optimum combination of equality and excellence. We would put this general question to the Californians and will return to it in the particular context of a more detailed appraisal of the community colleges below.

THE CALIFORNIAN SYSTEM OF POST–SECONDARY EDUCATION

The Californian system of post–secondary education has been dispassionately and definitively described by Clive Condren in his background report prepared for the California Postsecondary Education Commission and for the OECD Review under the title *Preparing for the Twenty–First Century*, a summary of which will be found in Part Three of this volume.

We shall not repeat, though we frequently refer to, this admirable compilation of the essential facts about contemporary higher education in that state. Instead, we draw attention to those particular features of access and retention, planning and co–ordination, governance and finance, and relations to the economy which seem to us to be especially significant from our visits to institutions and from our discussions with people.

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Chapter 4

THE CALIFORNIAN VARIANT: STRUCTURE, SEGMENTS AND FUNCTIONS

Structure

The Californian system of higher education is an American variant, self–consciously in the vanguard of educational development. At the apex of state provision is the University of California, a great public institution which embodies characteristic policy priorities. Led by its President, David Gardner, there is a clear commitment to increasing recruitment from the ethnic minorities, developing a coherent and structured curriculum for undergraduates, disseminating an internationalist outlook among students and promoting an emphasis on humanistic teaching and research despite all the pressures towards specialisation, responsiveness to the market for vocationally trained graduates, and commercially profitable research products.

Californian educational leadership is keenly aware of the increasing population (rising by 9 million to reach 32 million in the year 2010) and its ethnic diversity. The secondary school system (Grades 8 through 12) will be taking in half a million more students over the next three years, recruited largely from families who are poor, do not have English as a first language and who have no tradition of extended education. In 1992 this cohort will reach college age. There are grave difficulties about high school graduation for such a population. But these difficulties do not end with high school commencements. The demographic background is essentially characterised by the disparity of age structure between first world and third world countries. California is in a dramatically exposed position between these two worlds: Mexico belongs to the old, California to the new, demographic regime.

OECD countries respond to this disparity by three strategies: they can export capital, import goods or assimilate people from the third world. All three strategies are employed with varying success. But the Californian phenomenon is a vast if imprecisely numbered and unofficial immigration of young people from the inflated younger age–groups of Mexico, Latin America and the Asian countries (other than Japan which has adopted the new demographic regime of low fertility and is therefore an ageing and potentially declining population). The outcome is that the Californian economy enjoys a copious labour supply but at the same time faces the challenge of educating and training its newcomers to meet the occupational demands of a post–industrial society and the citizenship demands of recently arrived ethnic minorities. Californian education, in other words, finds itself at the meeting point of two quite different societies. It must fashion policies for both economic and social integration. It faces the task of providing assimilation through education on a scale and in a form which surpasses the notoriously intransigent difficulties of the European countries with their *Gastarbeiter* and ex–colonial immigrants.

For those aged 18 or beyond, the Californian Master Plan is the state apparatus for meeting this challenge. However, although undergraduate enrolment in public institutions is quantitatively

dominant on the Californian educational scene, there are over 200 "accredited" independent universities and colleges, and 265 private vocational schools, many of which are "proprietary" and not securely integrated into the system as a whole. There are 1 700 000 students in the public system while 200 000 attend private institutions. The private sector awards half of the Master's degrees, 45 per cent of the doctorates and 70 per cent of the professional degrees[1].

Undoubtedly it all adds up to a post–secondary system of distinctive character and quality. This is not to suggest the complete absence of parochialism or partial awareness among participants in particular positions. We are not all sociologists all of the time. It is hardly surprising that a research physicist at the Lawrence Berkeley Laboratory might define his world as a network of physicists, a biologist at Davis might be primarily concerned with the agricultural community or a theologian at the University of San Diego might see herself as belonging primarily to her religious order. The "segment" and the "system", we noticed, often had ambiguous reference on the tongues of our informants. No doubt the post–secondary arrangements appear more tidy and more integrated to the administrators in Sacramento than from the point of view of an assistant professor on the Northridge campus or at Occidental College. Nevertheless, there is a firm structure resting on the constitution and on legislation, formed by major strategic policies which were written into the Master Plan with its modifications since 1960. The Master Plan lays out a coherent organisation with defined missions for each of the segments and an overall governing and monitoring process of government, administration and voluntary co–operation.

Moreover, the system is not merely a legislative and administrative framework. It also rests on traditions, shared ideas about the purposes of education, an acknowledged hierarchy of prestige, of networks of professional relations and values, of recognised rights and duties for unions, professional associations, the alumni and the governing bodies. It is in short a normative as well as a legislated system. The segments and their components are in complex interdependence. There are, to be sure, many problems of co–operation, co–ordination and the regulation of divergent interests. There are arrangements for inspection, monitoring, evaluation and forecasting, with the California Postsecondary Education Commission (CPEC) occupying a pivotal position. We are not here suggesting that the system works with mechanical or frictionless efficiency, nor that data measuring performance or effectiveness of the means to the ends of equality of access and quality of attainment are as clear and comprehensive as they might ideally be. But, by comparison with most other education systems, there is a tremendous effort to produce detailed information and to maintain collective intelligence. And above all, we have been impressed by the openness of the debate about problems and policies. There is, in other words, a concerted search for rational means of realising broadly shared aims.

The Californian Segments

The Master Plan, through its several revisions since 1960, has firmly maintained a structure of four segments — the University of California (UC), the California State University (CSU), the Community Colleges (CCC) and the independent universities and colleges. The segments, as we have noted, have clearly differentiated missions. Research and research–based education is reserved in the public sector to the University of California — a large research university, centrally monitored but decentralised into nine campuses. The University aim is excellence, with strong scientific and competitive norms and with a core of full–time students selected from the best 12.5 per cent high school graduates. This group of talented undergraduates (about 120 000 in 1987) supplies the future graduate students and many of the political and professional leaders of Californian society. The University of California has a licensed monopoly to offer education to would–be

doctors, dentists, veterinary surgeons and lawyers who are influential members of the Californian middle classes. The University also has control of public Ph.D programmes. It shares this mission with some of the private universities such as Stanford, the California Institute of Technology (Caltech), the University of Southern California (USC), the Claremont Colleges and other independent institutions. Altogether, California boasts six of the major national research universities.

A second and much larger segment is composed of the California State University (CSU), a centrally co–ordinated organisation currently under the chancellorship of W. Ann Reynolds, with 19 campuses scattered throughout the state and themselves with a diversity of character, ethos and specialisation. Their job is to educate students for Bachelors' and Masters' degrees in all disciplines, and for all professions other than law and medicine (including veterinary medicine and dentistry). The students are recruited from the top 33 per cent of high school graduates. Some future political leaders and the majority of future educators pass through CSU. It also has some joint doctoral programmes with the University of California, but its major contribution is to the mainstream of teachers, engineers, technical experts and other members of the professional middle class. Seventy per cent of its undergraduates and only 16 per cent graduate students are full–time, and they are mostly teacher trainees. The professional programmes hold pride of place on the campuses, the average age of students is rather higher than that in the University of California, and there are relatively more women and more part–time students with previous occupational and professional experience.

The Community Colleges

The third segment is composed of the community colleges offering two–year programmes and a vast range of vocational and technical subjects for both transfer students and those of all ages and backgrounds who seek continuing education. The community colleges compete with an increasing number of private vocational schools which offer short specialised occupational training, adjusted and responsive to the local labour market[2]. Although liberal arts and sciences offer about half the programmes, general education cannot be said to be central to the community college mission. Roughly 1 300 000 students are connected through the colleges to the local demand for labour. The 106 establishments are scattered over the whole of the state, in 70 community college districts, thus offering a wide selection of courses in technology, science, humanities, social sciences, arts and crafts, administration, sport and so on throughout California. Extreme diversity has largely replaced variation within a core curriculum of general culture.

The basic entry qualification is a minimum age of 18 and a high school diploma. The colleges pursue three objectives: remedial studies, vocational education and general education which prepares students for transfer to one of the other segments. In the year of our visit we were informed that 43 per cent of all high school graduates entered community colleges, though this figure had dropped to 33–36 per cent in the lean years of reduced financial support in the early 1980s. In city districts of concentrated poverty, however, the enrolment rates of ethnic minorities are lower: 26 per cent in the San Francisco community college district in the recent past. Of the ethnic minority high school graduates who go on to post–secondary, studies three–quarters do so through the community colleges. The community colleges have therefore to respond to the problems of providing remedial education, English as a second language, and a variety of educational demands from a highly mobile student body. Many community college students have to pay the "opportunity cost" of not working while they are studying, and this real sacrifice explains why general education courses are so often dropped, whereas specialised technical training is in constant demand. Many of our informants were sceptical about the market value of the associate degree awarded

after two years of study, by comparison with the high school diploma. If post–secondary study were to be distinctively valuable, a minimum of three years was needed.

There is a policy issue here of high importance. Our informants drew attention to the problem that the associate degree is often not recognised as an entry qualification for transfer into the degree courses of the four–year colleges, nor is it an adequate qualification in the search for jobs. Thus, it appears that while community college courses may well serve many adults seeking continuing education and the means of occupational promotion, they may be far less attractive, because less useful, to young people in their initial post–secondary education. In consequence, some do not enrol and many others leave without a formal qualification.

Moreover, behind this considerable impediment to the realisation of the transfer function which is laid on the community colleges by the Master Plan, there remain the difficulties of the secondary schools on which they rely. In the coming 15 years, poverty, illiteracy, poor education in the K–12 system, high rates of drop–out, and the concentration of such problems in urban environments could depress the quality of basic education. There is a weakness at the base of the system which must be tackled and to which we return below.

At the same time we must also recognise the successes of the community colleges. We have already referred to them as a distinctive if not unique feature of post–secondary education. Our visits there left us with a vivid impression of vibrant populist institutions, diverse in their mission and energetically determined to serve their local communities. They touch the lives of virtually all Californians. A visible local educational preserve, they have been attended at some time by half of California's adults, not simply those who begin the climb through the system as transfer students but also those seeking adult courses of leisure learning or short vocational training, perhaps already graduates from other colleges or universities. And yet our conversations also made us aware that California's strength in broad educational opportunity carried with it the possibility of trying to do too much with too little.

However, the most notable feature of this remarkable "segment" of the post–secondary system is its diversity in relation to local educational needs. The range of conditions is illustrated from two of our visits. One day we drove through upland country roads lined with hibiscus and ceonothus; bougainvillea cascaded over the white walls of adobe villas. The San Mateo campus stands on 300 acres of coastland hillside, its low–density buildings elegantly celebrating the prize awarded to its architect and welcoming a polyglot of students who travel from the rich suburbs of the surrounding county. Another day we drove to the Trade–Tech College in downtown Los Angeles. We approached through the grim if sun–washed urban streets which are the "turf" of competing gangs in the struggle for control of the illegal drug trafficking. The campus is surrounded by gaunt steel fencing, fifteen feet high, to keep out larceny and violence and murder. Yet inside is a thriving and purposeful school offering open admission to practical courses in automotive engineering, fashion design, printing and computing for $5.00 a unit. The president is a calm and competent Black American; our guide was an able and enthusiastic teacher. Among the students with whom we discussed transfer and vocational intentions, a young man, an ethnic immigrant, shyly but without embarrassment expressed the quintessential idea of the community college. What was his ambition? "Well, one day I hope to be called Dr. Pedro X, and when that day comes I shall be very proud."

There is more historical significance in the development of California Community Colleges than is generally thought: their taproots are in local community schools. But they derive also from central initiative akin to the origins of the land–grant colleges. At the beginning of the 1860s, Senator Morrill proposed a plan to make possible the establishment of state colleges, which brought about a revolutionary change in the history of higher education in the United States and Europe. A requirement for the establishment of the land–grant colleges was that they include schools of

mechanical engineering and agricultural science. Compared to the traditional university based on the liberal arts and sciences, these colleges attached great importance to occupational education, including military training, which was necessary for maintaining the security of the frontier. They served the economy of their region and locality. The term "cow college" was an affectionate if somewhat derisory nickname for what eventually became the state universities.

Another special feature of the public universities, at least in principle, was their readiness to admit any graduate of a high school approved by the state board of education. Based on this principle, the state university was financed through public assets and funds. The establishment and development of state universities was made possible not only through the use of federal government lands but also through state financial contributions.

The history of community colleges follows the same line. But in response to new social demands, they have developed a form of higher education that differs from that of the University of California and the California State University, albeit that both were founded in order to achieve a democratisation of higher education. Experience in the twentieth century showed that the two university segments alone were insufficient: community colleges had to be created to meet new demands. If the Morrill Act was meant to provide a new higher education to meet the needs born of classical industrialism in the United States in the nineteenth century, then community colleges are the response of a yet newer higher education to the radical changes of post–industrialisation in twentieth century America. The 1984 data recorded in the CPEC report, *Preparing for the Twenty–First Century* (pp. 161–162) show liberal arts and sciences (leading to a Bachelor's degree) absorbing 46 per cent of student hours, followed by occupational education with 33 per cent. Remedial education (short–term and adult education) takes 8 per cent, non–transfer liberal arts and sciences 7 per cent, and community or continuing education 5 per cent. These labels are somewhat misleading, in that much of the work which is classified otherwise is in practice continuing education for employed adults. At all events, the mission is diverse, though the role of the community colleges which is most emphasized by the Master Plan is that of enabling students who have completed their general education to transfer to a four–year university. An urgent question now is whether the commitment to transfer opportunities embodied in the plan is adequately matched by state funding.

True, the community college offers wide–ranging opportunities to many different kinds of people. It establishes a transfer system to four–year institutions for all who have the ability and the will. Second, it attempts to ensure qualifications for employment in a changing industrial and professional society. Third, it endeavours to enable people to participate in society by offering the increasing number of student drop–outs remedial education in basic subjects such as writing, reading, and mathematics. Fourth, it provides "recurrent education" to middle–aged and older people to encourage continuing activity. Overall, "community education" aims to enrich the life of the whole community through learning. Yet the sum of these admirable ambitions may be greater than that of public willingness to vote their necessary funds.

A trans–Pacific comparison may be instructive here: In Japan, where economic growth from the 1960s has been very rapid, new post–secondary educational institutions have increased in number and expanded their curricula. Until Japan's School Education Law was revised in 1975, there were a number of private business schools called "miscellaneous schools". After the revision of the law in 1975, these came to be called *senshu gakko* (occupational schools). But lacking any mechanism for transfer and without public funding, they are less well structured than the California Community Colleges and are more similar to private vocational institutions. The number of former miscellaneous schools approved as complying with the new legal standards now exceeds 3 000, with a total enrolment of 650 000. The curriculum includes laser technology, robotics, electron technology, costume design, and paramedical services.

If, however, the California experiment has international significance, substantial problems nevertheless remain. Among the ethnic minorities, many Asians are eligible for admission to UC and CSU, and they seize the opportunity. But with Hispanics and Blacks, the numbers studying in four–year institutions continue to be relatively low. Declared public policy stresses the basic principles of equity, access and quantity, and the aim is to accept as many Blacks and Hispanics as possible. However, the high percentage of drop–outs among high school students from these ethnic groups means that many lack the requirements for college admission. Moreover, the fragility of the family structure and a low–income, unfavourable cultural background weakens aspirations to higher learning.

Under these circumstances, policies based on equity, access, and quantity invite a lowering of educational standards. Even if more students were formally enrolled, the quality of learning might deteriorate. A balanced policy must stress excellence as well as equity, success as well as access, and quality as well as quantity, otherwise the full development of California, with its heterogeneous population, will not be possible. The problem is not limited to education: many members of California's ethnic minorities form part of an underclass. To alter this, and to realise a democratic society, every device of economic and social policy will need to be brought to bear. Chapter 8 of *The Twenty–First Century* describes in detail the various types of remedial education being offered to students. Teachers to whom we spoke at community colleges in San Francisco, Santa Monica, San Diego, and other places described their time–consuming efforts to arouse interest in students who had reached an academic stalemate under their inauspicious circumstances.

The problem is serious, and as J. Gary Shansby, Chairman of the Commission for the Review of the Master Plan, suggests, it cannot be solved within the community colleges alone: "early in our deliberation we concluded that postsecondary education and the public schools are closely interdependent parts of one educational system and that the success of each depends on the other...We view postsecondary education as the key to providing better teachers, more useful research, and expanded outreach programs for the improvement of the public schools" (CPEC, 1987, p. i).

Independent Institutions

We have already noted the Californian emphasis on the importance of the private or independent sector in post–secondary education. This array of institutions constitutes the fourth segment of the post–secondary system established by the Master Plan: the schools, colleges and universities that live by tuition, private gifts and federal support to students and to research, and which are not directly supported by the Californian state budget. They are thus legally rather than financially part of the system. Two hundred and nine of them are either accredited or are candidates for accreditation by agencies recognised by the United States Secretary of Education or the Committee of State Bar Examiners of the State of California. Accreditation gives them the right, under state law, to award certificates and degrees without review by the superintendent of public instruction.

The independent institutions are in fact a heterogeneous group: some are religious and some secular. Some are narrowly occupational, others offer the full panoply of first, second and doctoral degrees. Some have their foundations in the middle of the nineteenth century, others were born yesterday. Some are huge, like the University of Southern California with its 27 000 students, and some tiny with a handful of pupils in a rural location. About a quarter of all students who attend four–year colleges in California are in private institutions. There are 61 regionally accredited institutions, including Caltech, Stanford, and the Claremont Colleges, all of which have worldwide reputations.

The Association of Independent California Colleges and Universities (AICCU) nominates a slate from which the Governor appoints a member to represent the Association on the California Postsecondary Education Commission (CPEC). At the humbler end of this segment are non–accredited degree–granting institutions, theological seminaries, institutions which are authorised rather than accredited, or approved rather than authorised. There are thousands of private educational institutions with a narrow focus on specific skills, preparing people for careers in "aviation, bar–tending, cosmetology, income–tax preparation and real estate sales" (*The Twenty–First Century*, p. 18). It is in short a segment of greater variety than any of the three public segments, but it has a vital place in the system and is represented on CPEC.

Functions: The System in Action

We can complete the picture of higher education in California by drawing attention to some aspects of its functions, particularly research, innovation, links to business and industry, and adult education in its various forms.

Research

The six major Californian research universities are members of the exclusive club of the main 54 research universities in the United States — The Association of American Universities (Stanford, USC, UC Berkeley, UC Los Angeles, UC San Diego and Caltech). In 1983 six of the Californian campuses were among the twenty institutions which received the largest amount of support from federal organisations. In addition, UC and Stanford have won 20 Nobel prizes.

The 19 campuses of California State University form essentially an undergraduate university system with the addition of large departments of education where the Master's degree or the (joint) doctorate is a normal step in the teaching career. One quarter of its faculty have a Ph.D from UC or Stanford. But the academic staff, with their twelve hours' teaching a week and much administrative, counselling and related work, cannot be very active in research. It is essentially a teaching milieu. Even in its doctoral education for teachers, the resources — according to Chancellor Ann Reynolds — "are modest compared with what is required for research degrees"[3]. It is true that some CSU universities have developed special centres of excellence which receive research money from business and even from the National Science Foundation. At the Northridge campus, the interdisciplinary centre for studies in cancer and development biology includes 25 research fellows financed by Northridge resources, gifts and a grant from the National Science Foundation. And through their close connections with local industry, certain CSU universities practise applied research to no less an extent than the British polytechnics, the German *Fachhochschulen* or the French *Instituts universitaires de technologie* (IUTs).

But CSU has a special responsibility in training professional technicians at the Bachelor's degree level. A high proportion of professional engineers, business, nursing and education graduates have to be imported from other states, and the number of Bachelor's degrees in California fall short of the demand by 20–30 per cent. Meanwhile the most recent revision of the Master Plan (1988) indicates that the hope of instituting research as a "normal" activity of CSU seems unlikely to be fulfilled.

In the research universities proper, *the budget for research* is a major part of total expenses. At the University of California, for instance, it is $887 million for 1987/88, compared with a total budget for operations of $5 118 billion, and with total instruction expenses of $877 million (which

includes faculty salaries of $465 million and instructional supports). Federal sources have supplied $481 million, and have increased at a rate of 9.5 per cent each year since 1982. Private sources have supplied $133 million, and $170 million came from the State of California budget.

At the University of Southern California — a private university — external funding for research amounted to $110 million in 1985. Internal money from the University's own resources and gifts is designed to provide some stability for faculty research efforts. It is largely channelled through a faculty research and innovative fund which distributed $2 million among 174 projects presented by the faculty.

The students at the research universities — mostly *full–time students* — are carefully selected according to sophisticated measures which include such non–academic criteria as student experience, personal initiative motivations, leadership, general culture, social interests and sports practised. Undergraduate entry at Berkeley has 22 000 applications for 3 500 places. At Stanford, 1 529 students entered as freshmen in 1987 from 16 884 applicants. Only 8.8 per cent of applicants to the graduate and professional schools gained admission.

The number of UC graduate students — an important source of future researchers — is now about 20 per cent of the total enrolment and is expected to increase by 9 000 by the year 2000; by 57 per cent in biology and physical sciences, 43 per cent in engineering, but also by 36 per cent each in the humanities, social sciences and education. Many of those students receive a research assistantship — at $10 000 to $17 000 a year — and are active and innovative under the guidance of the established faculty. Even undergraduates are encouraged to practise some research. It is at present difficult to enrol enough American doctoral students in engineering and computers because of the competition from industry. UCLA has to offer assistantships of up to $12 000 a year to retain graduate students in electrical engineering.

Selected graduate students, under supervision and after special training, contribute heavily to the teaching of undergraduates, in small groups and laboratory work. There are 2 406 teaching assistants at UC, making 46.5 students per assistant in the arts and humanities and 35 in the sciences.

There is a large international group of students, especially among graduates. At Stanford they represent 5 per cent of undergraduates, 25 per cent of graduates and 39 per cent of doctoral students; at UC, 50 per cent of doctoral students. Private universities can admit foreign students more readily than the public sector universities which have to give some priority to Californian residents. An international university, as the president of UC defines it, requires not only more foreign students: it also demands changes in language requirements and in the nature of the programmes, to make students — and teachers — more sensitive to and knowledgeable about other civilisations and the international character of modern society. At a time when the influx of people educated in foreign countries is expected to decrease, we wonder whether policies for international education are sufficiently clear and strong. We explore this problem in more detail in Chapter 6 below.

Strategies for Innovation

Strategic management methods are commonly used: either Californian university methods or those where each establishment defines and preserves its identity. Everywhere we noticed efforts towards systematic long–range plans, "presidential strategies", overall policies and evaluations of performance, systematic self–evaluation by departments, active communication policies inside and outside the university, and careful monitoring of public attitudes towards higher education and its institutions.

Long–term policies regarding relations with the alumni are considered important for reliable support and finance. At UCLA about 300 staff members work exclusively on public relations.

An "intelligence" service monitors the interests and resources of all alumni, for which there are 180 support groups on the campus.

The quality of the undergraduate programmes in the humanities and basic sciences which are the core of liberal arts education, and the supply of future teachers is also planned carefully. At UC, 30 674 undergraduates in the arts and humanities compare with 38 097 in the social sciences and 37 587 in sciences. Plans for more balanced disciplines, better sequential structure of subjects, better training of graduate teaching assistants, better exposure to integrative and synthetic courses by experienced teachers, are all in train. In particular, it seems to be difficult to convince engineering schools of the need for more general education and less early specialisation.

All the universities also have *special plans for linking themselves to the high school, the CSU and the community colleges* for research in education processes, teacher training or retraining, curriculum development, organisation of a core curriculum designed to improve the rate of transfer from community colleges, improvement in writing, in mathematics, in science, etc. At UC, "intersegmental programmes" designed for 1988/89 amount to $2.74 million. On the whole, such intersegmental policies did not appear sufficient to the authors of *The Master Plan Renewed* in 1987, who recommended stronger co–operation. Although the University of California Schools of Education still train teachers, their main focus is on educational research. They are frequently criticised for this emphasis and for research insufficiently related to teaching. The CSU education schools are the main channel for training and have recently launched a programme to recruit more widely from the minorities and to raise the quality of the teaching force. Improvement in the quality and efficiency of teacher training is an urgent issue, and intersegmental co–operative schemes should provide new techniques and incentives for change.

The universities also practise an overall *research policy* which designs priorities and includes strict procedures of evaluation. At UC there are priority programmes, such as the Pacific Rim, ageing, AIDS, robotics, earthquake research, biotechnology, education, some agricultural subjects, and the arts and humanities. Special funding is also reserved for developing doctoral level expertise in the administration of community colleges.

Within such strategies, research performance is the most important factor in the recruitment and remuneration of faculty members. We notice that the Commission on the Master Plan wants the UC to declare and ensure that teaching is given equal weight to research in retention, promotion and tenure. This is an old debated issue, but as excellence in research is the scarcer resource, the actual thrust of practice is towards more ample provision of teaching aids, better selection and training of teaching assistants, and maintaining or improving the faculty/students ratios (at present 17.6 full–time equivalent students per full–time equivalent professor).

Computer facilities policies are also playing an increasing role in both teaching and research. At the University of California, the state grant for instructional use of computers was estimated at $19.65 million in 1987/88, at $25.65 million for 1988/89, and at $124 million for replacement of outmoded machines. Yet still the University estimates that it has only "about half the equipment" it needs to implement its instructional use of computers' plan. This plan assumes that graduate students in engineering and computer science would use computers 20 hours a week; in other sciences, including management, nine hours; in social sciences, biology and medicine five hours; and in the arts and humanities three hours. But in the Spring of 1986 an internal survey showed that "a large number of students never used a computer".

Although research is admitted to be essential for economic and social development for California, there is no substantial "research policy" at the state level. State budget resources are needed to match federal or private support for research — a matching often required to obtain those grants — or to give incentives or to exercise pressure for more applied research. Meagre support from Sacramento may prove a weakness — as compared with other states — at a time when the flow

of federal resources to California is expected to be reduced, and when California will have to compete more strongly in the development of new "civilian" research fields in order to compensate the probable reduction of military research. However, a legislative response was made in the summer of 1988. A California Council on Science and Technology has been set up to identify long–range research priorities, to assess technology transfer, foster scientific leadership and sustain the state's economic development. UC, the independent research universities and CSU are to be involved, and the Council will report annually.

Adult Education

Adult education, part–time instruction, and continuing education is widely practised, particularly in the CSU and the community colleges. The distinction between students and adults is largely blurred by the "normal" participation of adults in classes with young students, and by the fact that such establishments admit students interested in non–degree courses, refresher programmes and specialised professional courses. Nevertheless, the Commission for the Review of the Master Plan (Recommendation 10), asks institutions to "review and where necessary adapt admission standards for older students to account for the skills and experience that are a better measure of potential success than are out of date high school records."

In research universities, adult education is not generally considered as a normal assignment of faculties. At UC, the highly developed "university extension" programme is a self–supporting operation reaching 360 000 persons enrolled in 11 000 different courses, seminars and conferences. UCLA alone runs professional programmes at the Bachelor's level at the middle–income range (average cost of one course being $150–$250) for 100 000 students. They work mainly with part–time professional rather than ordinary faculty members who, we were told, are not sufficiently "skills orientated". By contrast, in the CSU and the community colleges, faculty members play a leading part in adult training, in the regular courses or in "open university schemes". There are about 250 000 students supporting themselves in continuing education, as compared with 334 000 regular state–supported students, who on the average enter at 23.7 years old. Part–time study is normal. About half the students graduate only after ten years or more, and often from colleges other than where they began their studies. Given that CSU educates 80 per cent of the teachers, 50 per cent of the engineers, 65 per cent of the agriculture graduates and 40 per cent of the graduates in fine arts, and that it has produced one million graduates since 1961, there is obviously a large demand for adult education retraining.

At San José — the oldest CSU institution — with the equivalent of 19 000 full–time regular students, the self–supporting Office of Continuing Education serves 30 000 students, of whom 20 000 are part–time, and also provides programmes for employees on corporate sites. Many of the CSU establishments have organised specialised professional programmes in close co–operation with industry. Adult graduates, including those from UC, often come or come back to CSU for professional training and a second degree in business or technology. Many are "mobile" adult students who circulate from one campus to another in their sequence of specialised training, or for other personal reasons.

The community colleges are of course comprehensively engaged with adults who come for remedial and often technical education in special subjects. But the chancellor believes that not enough specialised technical education is offered, so that the private proprietary schools have partly taken over this basic mission of the community colleges. The point is in debate as *The Master Plan Renewed* insists on the importance of combining special technical education with some general education, which students eager to earn money in a better job tend to drop.

Systems for distance communication and teaching are widely available in the CSU and California Community Colleges (CCC) through interactive systems (telephone, audio teleconferencing, microwave, cable two ways, satellite two ways, computer–assisted instruction) and, probably more importantly, non–interactive ones (radio, audiotapes, open broadcast television one way, cable television one way, videotape). Some campuses, such as CHICO, Fresno, Sacramento, Stanislaus and San Diego as well as Stanford, have gained much experience in using such devices for reaching out to students at their place of work or residence, far away from the campus. Nevertheless, some evaluation studies emphasize the "lack of incentives for faculty members to use the technology in their teaching, the high initial cost of equipment, the lack of state–wide policy, and poor co–ordination among interested parties" — a serious weakness when the technology is quickly changing, costs are high, learning processes of the new methods are long and often discouraging. The successful use of such supports often depends on the talents and determination of individuals. Most campuses cannot establish an "up link" with the satellite — which costs from $200 000 to $500 000 — and have to use microwaves reserved for distance education in order to transmit audio and images in closed circuit television which now exists in all 19 CSU campuses. Computer networks and microprocessor workstations will soon be operating within the UC and the whole CSU systems — a major potential for data transmission.

A still more ambitious project is being designed by the CSU Chancellor's Office, which may gradually cover the whole State of California. Its objective is to link public high schools, community colleges and CSU universities. It will pay special attention to teacher education and retraining, serve professional development, and "enrich" courses to help students to meet the CSU admissions requirements. This would be an open co–operative system, on a voluntary basis, co–ordinated centrally, and it should be a self–supported organisation with state assistance. It would aim in the longer term at an integrated audio–video data system. It would reduce travel and time costs for students, permit proper planning, development and revision of courses with the help of the most qualified faculty members. It would imply programme sharing, curricular assistance, staff development, and would be used for all types of education. Initially, it would serve as a pilot system demonstrating and evaluating the efficiency of satellite–based delivery systems and the possibilities of their extension. Such an innovation as illustrated by the CSU project is, we note, recommended by *The Master Plan Renewed*, as a way to modernise teaching methods, reduce costs, improve quality, promote equality of chances and facilitate intersegmental co–operation.

Towards a Learning Society

In the late 1960s and early 1980s, a number of proposals emerged from various conferences of UNESCO and OECD countries which stressed the need for basic study of the structure of school education in relation to the social changes of the last 20 years. Such changes include rapid advances in science and technology, the transformation of society by the importance attached to information, the development of political activity on a worldwide scale, the evolution in economics, the increase in leisure, different life styles and patterns of human relations and changing values.

Post–secondary education in California has reached a level remarkable in the world. But social transformation outside the Californian schools has been more drastic than for most other regions of the world. As a result, there is a tendency to look to the schools to solve the problems born out of social changes. For many immigrants the acquisition of English is a necessary means of survival, but it is difficult to acquire fluency outside school. As the importance of information in society increases, the new social strata of "knows" and "know–nots" are taking shape, and turning into "have" and "have–not" classes. How can these new problems be dealt with?

There are important political aspects of these problems which must be solved by political and economic measures. At the same time, recognition that learning goes on not only in schools but also in the whole of society and throughout life is essential.

As we have remarked, the community colleges and other segments of post–secondary education do much to meet the rising needs of a learning society. In addition, we would point to three other responses: first, as abundant psychological research reveals, learning from an early age is most important and that those who learn early learn best. It is necessary to pay attention to the K–12 system and to integrate the post–secondary and public school stages of education. It is also important to improve the quality of education at home as much as possible. In other words, efforts to improve early school and family education are essential.

Second, on–the–job training and in–service research must be strengthened. Japan's remarkable economic growth since 1963 has been at least partly due to the importance attached to recurrent training and in–service research. Since 1955, Japanese companies have invested heavily in research and training. However, the drawback in Japan is too little public funding of such activities, which has meant that recurrent training and research in industries have focused on relatively immediate returns for the individuals and the organisations. In the United States, in contrast, 50 per cent of research funding comes from the public purse, and there are many research grants from various foundations. What is needed is for on–the–job training and research in industries to maintain well–balanced relations with general education and basic research. Not only United States and Japan but all advanced industrial countries are necessarily involved with realising this aim.

Third, it is widely acknowledged that the mass media often have a greater influence on the acquisition of social information and the forming of popular values both in schools and at home. In California, for example, the Public Broadcasting System is making efforts to improve its broadcasts. If the educational power of the media were to be improved and at the same time its freedom maintained, this would help in the emergence and development of a viable learning society.

Historically, California has made a great contribution to the world in forming an excellent post–secondary education system. We are hopeful that it will play a leading role in further developments both inside and outside the school. The next steps must lead beyond the institutions of post–secondary education towards the creation of a learning society.

NOTES AND REFERENCES

1. Of California's 195 private accredited degree–granting institutions, 125 are accredited by the regional agency — the Western Association of Schools and Colleges — (as are UC, CSU and CCC institutions), the remainder being accredited by specialised agencies (including their own membership associations). Of these 125 regionally accredited institutions, four are proprietary (for profit). Thus, of the 121 regionally accredited, non–profit institutions, 64 are members of the Association of Independent California Colleges and Universities (AICCU) and enrol 95 per cent of the students of such institutions. These institutions have historically received 95 per cent of the state's financial aid allocated to students attending independent institutions, and they are responsible for 90 per cent of the undergraduate degrees produced by California's regionally accredited independent institutions. The majority of AICCU institutions are comprehensive colleges and universities offering the full spectrum of academic subjects and disciplines. Virtually all of the non–AICCU members are schools offering specialised instruction.
2. As the 1962 examiners noted, there was an obscure and murky fringe of institutions without accreditation. It still exists.
3. $2.5 million have since been included in 1988/89 in the Californian state budget to fund research at CSU.

Chapter 5

FINANCING HIGHER EDUCATION

The financial support of systems of higher education is problematic throughout the OECD countries, and California is no exception. Indeed, given that it is a state with a strong tradition of commitment to wide access to public educational institutions, and is at the same time the land of "Proposition 13"[1], the general problem is here thrown into high relief. From the mid–1970s to the early 1980s all public higher educational institutions in California suffered heavy financial restrictions, in spite of the fact that the state was wealthy and heavily funded. There had been less than enthusiastic support for higher education under the governorship of Reagan and Brown. But the position was reversed in 1982/83 when the state gave strong support to the University of California, the State University segment and, to a lesser extent, to the community colleges. Moreover, this renewed state effort was matched, particularly in the university of california, with an equally strong growth in private support. behind both renewals there seems to have been a growing conviction that higher education had a great potential contribution to make towards economic growth, and also a heightened awareness that the competitive position of california in the united states and the world at large needed to be bolstered by educational effort.

The most significant feature of the Californian system is the established collective commitment to provide places in public institutions at comparatively low cost to students, a policy which has permitted social and professional integration of the successive waves of immigrants. For such a policy the choice of a public financial strategy which can meet the growing educational needs is essential. Competition for public funds between educational sectors (primary, secondary, post–secondary, university, permanent education) as well as with other social needs is intensifying.

More Spending or Less Taxes?

Resources for higher education can be achieved essentially in two ways:

i) First, by more public spending which can go directly to education institutions (institutional finance) or to students who will choose in which institution they want to spend it, when and in what amount (individual finance). It is conceivable that tuition fees and related financial aid to students could be sufficient to largely finance the institutions, as is the case in the independent sector. But in most cases there is a mixed solution: in the United States the tendency to increase students' financial aid corresponds to a political desire to increase the freedom of choice of students, and the institutional competition which derives from it.

ii) A second way is to reduce taxes on individuals, to accept increases of students' tuition and fees as a substitute for tax money, or through tax incentives for "charitable" gifts.

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Although California, in 1988/89, plans to use 15.1 per cent of its state general fund for post–secondary education, it has chosen to control the increase in public spending, and to cap the growth of taxes at the end of the 1970s, through constitutional amendments. It is clear that limiting the growth of taxation is equivalent to increasing income net of taxes and therefore encourages individuals to spend on education if they wish. This is quite a challenge, especially for educational development in a state which historically has organised a strong public system, albeit with a competitive independent sector. No doubt, decreasing taxation on individuals must gradually have an impact on the balance between public and private education. A sustained trend in that direction would probably challenge the achievements of the public sector, or shift education more strongly towards short–term professional objectives, or slow the progression in the number of admitted students. It would also develop "contractual" finance through sales of specific services, and lead to higher student fees in the public sector. Its social effects will depend upon the distributional effects of reduced taxation, i.e. the compared "effective rate of taxation" paid by different income groups.

In California the independent sector is not allowed to receive direct grants from the state budget, so that all "institutional finance", with the exception of federal research and students' aid, goes to the public sector. Public universities and colleges are able, and expected, to deliver free tuition to their students, to maintain their students' fees at a reasonable level, and to use them only for services provided to their students. Low student fees are a major factor in the democratisation of higher education and are favourable to public institutions: in 1986/87, fees collected from students (registration and educational fees) were $1 400 at the University of California, ($5 000 for non–residents), $750 at CSU, $100 at the community colleges; as compared with $11 200 at Stanford and $10 500 at USC.

Besides direct grants to the establishments, the budget also provides financial aid to students through a special state agency, the Student Aid Commission (SAC), which redistributes federal support as well as the state's grants. All students from the public, independent or private sectors have equal access to such aid, which is largely based on individual resources and managed on a competitive basis, close to a sort of national "education credit system" which serves to reinforce individual freedom of educative choice. This aid gives a relative advantage to the public sector because, although it takes account of the differences of tuition and fees between the two sectors, it must impose limits on the amount. Furthermore, its adjustment to the increase of education costs is lagging, which indirectly limits the independent sector's resources and forces it to increase its own tuition fees, to become more aggressive in its private funding strategies, and to favour, partly, more privileged students.

In addition to direct funding of institutions and students, California, in the last ten years, has led the socio–political move in favour of reduced taxes — or at least stabilization of the tax pressure on individuals, as we shall see below. That new trend was reinforced at the federal level by a major income tax reform in 1986 which transferred taxation from individuals to businesses. But reduced top tax rates on income also reduce the fiscal incentive of people to use tax–free charitable gifts. The real impact on individual finance of this new tax environment is of course more complex than clear.

National Trends in Post–Secondary Education and its Financing

Californian trends have been similar to those of the United States as a whole, and the national picture will provide a useful background for later comments upon California.

As in many countries, there has been a tremendous effort to raise the level of education of the population and to give everyone the right to education. The population of FTEs (full–time equivalent students) reached 8.9 million in 1984/85, compared with 6.3 million in 1969/70. Total revenues of institutions of higher education increased in constant 1980 dollars from $48.3 billion (1969/70) to $74.2 billion (1984/85), with a lower rate of growth in the second period. Current–fund expenditures per FTE in constant dollars grew in the public sector from $6 536 in 1969/70 to $7 001 in 1984/85. In the private sector it grew also from $10 135 to $11 200.

Educational institutions have become more "quality driven", more competitive, and business corporations have themselves developed their own "corporate classrooms", aiming at an active role of "change agents" in the education system. The financial pressures on the system are not likely to be reduced: demographic trends in the 1990s will bring a new wave of applications from the children of post–World War Two "baby boomers", with an increasing share of minority students needing more assistance and tutorial care. At the same time, many faculty will retire and it will be more costly to attract bright people into academia competitively with alternative careers. Public authorities are increasingly concerned with the "performance" of universities and the "success rates" of students, especially since Congress has given to everyone, even to those without a high school diploma, the right to receive public aid for post–secondary education if he or she has the "ability to benefit" from it. They have also kept within limits the attempts of public institutions to raise students' tuition and fees. The difference in fees charged by private and public universities is putting the public sector under pressure from application of students who can no longer afford the costs of private education.

Table 5.1 shows clearly enough the differences in financial structure between the two sectors:

Table 5.1. **Sources of Finance of Current-Fund Revenue in Higher Education in 1984/85, Nationwide**

Per cent

Sources	Public institutions	Private institutions
Federal	10.6	15.9
State governments	45.1	1.9
Local governments	3.6	0.6
Private gifts, grants and contracts	3.1	9.3
Endowment income	0.6	5.4
Sales and services	20.0	23.7
Tuition and fees	14.5	38.7
Others	2.6	4.5

Source: Ron Kimberling, "Changing Patterns of Finance in Higher Education. Country Study: United States of America", OECD Educational Monograph, 1988.

Student financial aid has become a major element in national higher education policy. One particular trend has been the shift to portable student financial assistance (Pell grants), of the "means–test" type, as compared with post–war veteran or social security assistance available to all.

Such aid takes account of family income and of a student's assets, set against 60 per cent of the cost of attending a particular university, public or private. This procedure is aimed at increasing the freedom of anyone who qualifies (entitlement programs) to apply to the university he chooses — which enhances competition among universities, public and private. Altogether, federal, state and private financial aid to students in 1984/85 amounted to $19 billion. The 1981 reductions in public aid concerned mainly non–means–tested supports — such as veteran programmes — and in 1986, Congress re–authorised student aid programmes for five years. For the first time it introduced eventual eligibility for the "less than half–time" students as part of a permanent education policy.

Within this public aid, and besides the grants, another type of financial aid grew at a high rate in the form of Guaranteed Students' Loans (GSL). In 1980/81 it benefited about one–third of the students, who were led into borrowing due to the limited growth of the Pell grants system. The federal budget in that year paid an interest subsidy of $1.6 billion, but this averaged $6.2 billion in loans. At present, all borrowers have to pass a means test to avoid abuses. This loan policy, which is now a normal part of students' "package" support, has led more low–income groups into borrowing and is not without problems, as the increasing rate of defaults demonstrates: total federal default payments for 1987/88 amounted to $1.6 billion. This loan policy is believed to have benefited students entering private and proprietary establishments more than the public ones.

Private funding has partly compensated the lagging adjustment of public funds to the increase of the cost of education for an enlarged group of students. From 1970 to 1985, revenues from private gifts, grants, contracts, endowment incomes, and sales and services grew from 23.5 per cent of institutional receipts to 28.9 per cent. Universities have engaged actively in providing paid services, in education for adults and in applied research contracts with industries. They have developed science parks, business affiliates, elaborate patents policies, and even created "university–owned enterprises" with a view to developing more active technological transfer between industries and universities: public funding, through the National Science Foundation for instance, became more conditional upon the practice of such contracts. In these ways universities' finance has become more entrepreneurial and adaptive, with appropriate marketing strategies. Today education is increasingly a "buyer's market". In 1988/89 it is estimated that the average marketing cost for each enrolled freshman is around $800.

It is clear that all these national features are part of the Californian scheme and some are even more strongly in evidence, such as the public authorities' concern for education performances (e.g. the one dealing with equity and with technology transfer between academia and business, and for a larger group of Californian graduates in mathematics and science); the demography and its ethnic component; the budgetary constraints; the difficulty of recruiting enough minority faculty; the competitive drive for private funding between the private and public sectors of higher education. All these objectives call for more resources, especially since most of them are interdependent and their corresponding needs are quickly accumulating in the last years of the century.

The Californian State Budget and its Constraints

What are the prospects of public finance of post–secondary education? Everyone in the political system is conscious of the needs of education. But there are also other competing and urgent social needs, such as transport, health, law and order, and secondary education itself. As in many countries, there is some feeling that better performance of post–secondary education could be achieved by internal reorganisation, which is not clearly enunciated except for some of the recommendations of the Commission for the Reform of the Master Plan in 1987. But it is felt that this

is mainly the responsibility of the institutions themselves. Furthermore, public opinion as expressed through tax votes has built in the limitation of taxes as a major condition for the development of California. It is therefore important to analyse those internal constraints in the Californian budgetary process insofar as they create uncertainty for long–term financial strategies of establishments, and where it would be insufficient to alleviate them merely by taking advantage of the flexibility embedded within the complex and ambiguous legislation.

The educational budget of the State of California is *global*: it includes all public funding received by residents — from federal, state, as well as local sources. This principle of "unity" reinforces the constraints imposed by the tax limits which have been developed in recent years. Moreover, the budgets are "itemised", except for the University of California which, too, is careful to respect the basis of the budget negotiations with the financial officers of the State and the Legislature. No deficit is allowed in the state budget, and votes are ruled by a two–thirds majority.

It is in this environment that major fiscal reforms have been recently introduced. Two "spending" and "tax" limits were voted into the Constitution in 1978/79, and another constraint has been added in November 1988:

i) The so–called *Gann ceiling* (Art. XIII–b), voted in 1979, limits the appropriations which can be financed each year from the proceeds of specified taxes on income, sales, etc., by each taxing authority, whether the state, local government or school district. Such expenditures, in any year, cannot grow above the rate of inflation as measured by a defined consumer price index, taking into account the rate of increase in the population. In other words, the "real" expenditures — net of inflation — cannot grow more than the population. Any excess of taxes must be reimbursed to taxpayers (about a billion dollars in 1987/88). In 1986/87 the $24 billion of appropriations subject to limitation was just $100 million under the state appropriation limits, as compared with the $3.3 billion of 1982/83, leaving almost no freedom for a total real growth rate above 1.5 per cent a year (population growth rate). This is a severe constraint on educational expenditure where needs are growing at a higher rate than the population. The consequence is increasing competition for funds with other social needs such as primary and secondary education, public health, urban transport and prison buildings.

ii) Another constraint is due to Proposition 13 (1978), imposing a limit to property taxes which are an important source of funding of local education by city, counties and school districts. The result has been striking for the community colleges which have since had to rely more for their finance on the state budget: a process of centralisation which has its shortcomings from the point of view of local interests in the colleges, and of adaptability of those establishments to local needs. In 1988 some proposals by Senator Gann himself (Proposition 71) to alleviate the effects of those constitutional tax limits were opposed by the Governor.

iii) *Proposition 98*, the Classroom Instruction Improvement and Accountability Act, was adopted in November 1988. Essentially, it concerns the public "K–14" system. It poses the principle that funding the budgets is the first priority for the state. Its minimum level, expressed as a percentage of the State General Fund Revenue, will be either its appropriation at the 1986/87 level, i.e. 39 per cent, or its 1987/88 level adjusted for inflation and enrolment increases — whichever is the greater.
Furthermore, it creates an important exception to the Gann ceiling, since 4 per cent maximum of the general fund support to K–14 could be allocated to it, taken from any state revenue in excess of the state's Gann limit. As a result, the 1988/89 budget will have to be reopened to provide an immediate increase in the K–14 budget.

Such guaranteed finance in favour of K–14 will have to be compensated by reductions or by smaller increases in other items, like higher education and other social needs. The University of California, whose budget since 1986/87 has grown the least, expects the combination of Gann limits and Proposition 98 to make it unable to finance its planned expansion until the year 2005.

The new budget constraint clearly shows that people vote in favour of more resources for identified needs. They have also voted an increase of tobacco taxes by some $650 per capita a year. But this tends to squeeze out the little amount of flexibility which persisted in the budget. This is probably why Governor Deukmejian declared in November 1988 that if the Gann limit did not work, "then we would consider perhaps offering some suggested changes or even proposing to completely eliminate [the limit]" (*The Sacramento Bee*, December 3, 1988, p. 1).

The Resources of the Public Segments

Table 5.2 shows the budget proposed for each segment of the public sector in 1988/89 and, as a percentage of the budget, the relative importance of the various sources of finance:

Table 5.2. **Resources of Post-Secondary Education in California, 1988/89**

	General fund and other state	Federal support	Property taxes	Students fees	Others	Total needs ($ mill.)
	Percentage of total					
UC	31	40	–	5	24	7 699
CSU	70	3	–	7	20	2 382
CCC	60	1	30	2	7	2 723
SAC	50	50	–	–	–	332
CPEC	70	20	–	–	10	5
Others	–	–	–	–	–	n.a.
Total ($ million)	5 414	3 233	664	777	3 078	13 167

Note: The general fund of the Californian state budget is added to "state lottery" and "other state" (which amount to $263 million). The column "Others" includes reimbursements, hospital fees, private contributions, sales and services, and auxiliary enterprises. The row "Others", not computed here, refers to special expenditures such as "Hastings College of Law" and "Maritime Academy" ($19.3 million together).

Source: Calculated from CPEC, *Summary of Proposed 1988-89 Budget*, 1988.

The University of California, being a research university, receives from federal sources $2.8 billion, but this includes 2.2 billion for the energy laboratories, and research funds. Excluding those energy grants from its budget, UC receives $5.5 billion. The CSU system receives $2.3 billion and the community colleges $2.7 billion. These differences in funding are largely explained by the research responsibilities of UC, its monopoly in medical, dentistry and pharmaceutical studies, its large graduate and doctoral student group, and the complexities of its operations.

The finance of community colleges is still largely based on secondary education criteria and procedures, with, for instance, a financing basis called *average daily attendance* (ADA) of classes, and a direct scrutiny by members of the Legislature. This policy, apparently reinforced by the recent adoption of Proposition 98, considers the CCC as part of a K–14 system. As successors of junior colleges, the community colleges until 1979 were largely financed through local property taxes, a system which maintains strong links with local authorities and communities but which at the same time weakens public perception of the needs of the system as a whole and the capacity of its central board to conceive and implement a development policy and to achieve stability of resources.

Since 1973 the state has endeavoured to limit, on a local basis, the amount of property taxes used for the CCC — a system which was a source of much inequality among different districts. And still in 1976, local taxes covered 60 per cent of the needs of those colleges' revenues per ADA. In 1979 the adoption of Proposition 13 severely reduced local finance based on property taxes, which were cut by 55 per cent in one year, and forced the state budget to compensate, albeit incompletely. Successive laws since 1981 have enacted complex methods of financing additional needs, involving "caps" on increases in districts' spending, but this has created uncertainty about the budgets to come, and administrative complexities.

New systems are now being considered, based on categories of needs (differential models) which would suppress the ADA basis in favour of a new FTE criterion analogous to the one used in four–year colleges. Proposition 98 guarantees the resources of community colleges while taking their expansion into account, a measure which confirms the new concern for their needs which appeared in their budgeting two years ago.

The Finance of the Independent Sector

We have already seen that in Californian post–secondary education there is a substantial fourth segment, regionally–accredited institutions — independent, non–profit, degree–granting — as well as a large number of proprietary schools, which together comprise the private sector.

With respect to the finance of the independent sector in California, we have no central statistics. As an example, however, in a private research university such as the University of Southern California with 30 000 students, from a $579 million revenue (unrestricted plus restricted resources) in 1987/88 students' tuition and fees provided 49.2 per cent; contracts and grants which include some gifts 25.3 per cent; sales and services 17 per cent; endowment income 2.5 per cent; and investment income 1.09 per cent, with "others" 4.9 per cent. Note that "restricted resources" were only 23 per cent of the total.

Endowment resources in Californian independent universities are substantial but lower than in the eastern private universities. At Stanford the 1986 endowment values were $1.2 billion and at USC $0.36 billion, compared with Harvard's $3.4 billion. "Endowment per student" was $91 000 at Stanford and $15 000 at USC, as compared with Harvard $240 000, Princeton $257 000 and Yale $163 000. Yet, Stanford's "current fund revenue" per student, which includes tuition and fees, endowment income, investment income, gifts, contracts and grants, and sales of auxiliary enterprises, in 1986/87 amounted to $63 857, as compared with Harvard's $42 117.

Private Funding of Universities

The independent sector is highly successful in raising private money, also tapping federal resources: Stanford in 1986 collected $219 million in federal contracts and grants, and USC $94 million, as compared with MIT $143 million and Harvard $94 million.

Collecting private resources is the fruit of long–term systematic strategies which must involve the whole spirit and initiative of universities, adequate policies for undergraduate networks, professional networks, and all kinds of relations with the industries and professions: Stanford received $198.5 million in gifts in 1986/87, i.e. one–fifth of its current fund revenue. This was the largest amount of private gifts in the whole United States, and plans are in train to raise more than one billion by 1991. USC obtained $91 million and Caltech $80 million.

The public universities have had to use equivalent strategies for their private funding: at the University of California private gifts and contributions other than the sale of services provided $330 million in 1987/88, i.e. one–tenth of its total needs other than for the energy laboratories. UCLA, we were told, has 50 people working full–time for their fund–raising campaign, with 300 people providing occasional aid. Berkeley obtained $73 million, UC San Diego $35 million. Besides these gifts, the public universities are competing with the independent ones for research contracts. At UC, as we have seen in Table 5.2, sources of finance other than the federal and state budgets and student fees are expected to provide one–quarter of the 1988/89 total needs. For the CSU the figure is 20 per cent, which is quite remarkable in a system whose research function is limited. The community colleges received 7 per cent.

There are obvious limits to private funding in the public sector and it seems essential that the state provides the necessary resources to maintain and develop the full–time faculty needed for fundamental research and general education. There do not seem to be serious problems now, but the possibility of having to limit the number of students admitted because of insufficient growth of permanent resources is no longer excluded at UC and CSU. On the other hand, the independent sector emphasizes that its role in education and science is equivalent to that of the public universities, and it is asking for an increase in public student financial aid which would free new funding for other needs.

Students' Financial Aid

There are different ways of supporting students:

i) *Individual aid to students*, distributed by the California Student Aid Commission on the basis of criteria determined by federal and state authorities. We have noted that in the public sector as a whole there is no tuition fee. Nevertheless, other student fees represent 5.9 per cent of the total resources of post–secondary education and have to be used exclusively for services to students, such as counselling, career guidance, cultural activities, scholarships, etc. The state and the legislature watch carefully the proposals by public universities to increase their fees: adjustments have to be gradual, reasonable and negotiated with students. a widespread american and californian arrangement provides that free tuition is further aided by the offer of assistantships in teaching and research for the more highly qualified students. there are also "work study" supports which are well appreciated.
The 1988/89 budget provided $323.15 million, including $25.2 million of federal funds and $163.66 million for the Guaranteed Loan Reserve Fund. $134.22 million were part of the "general fund" of the Californian state budget, i.e. an increase of 6.6 per cent over 1987/88. But on the whole, due to a 23.9 per cent decrease in federal funding, the total budget for aid increased by only 0.6 per cent. Some supplement of resources in the "restoration package" will, however, permit the Commission to distribute its own Californian grants: 43 000 Cal Grants A, and 69 000 Cal Grants B and C reserved for needy

students. The maximum amount of each grant is now $4 700 but the average was $1 650 in 1986/87. In addition, the Commission distributes the federal Pell grants at an average of $1 105 a year.

ii) *Guaranteed loans*, whose share in total aid was only 35 per cent in 1973, reached 46 per cent in 1984/85. In 1987/88 new loans within the Student Guaranteed Loans Program benefited 230 000 students with $620 million. At UC, graduate students received 46 per cent of their aid in the form of loans, and this proportion is 89 per cent in the CSU graduate section because many of these students, being part–time (more than 50 per cent of their time in employment), could not receive grants until 1989. This extension of loans is the result of some stagnation of the grants in the last ten years — due, it seems, to the complexities of the consensual decision process involving the Legislature and the executive branch, and also to the limited capacity of the state to influence federal decisions as compared with professional organisations (*Student Financial Aid in California: To Close the Widening Gyre*, CPEC Report 86–31, p. 16).
This development of student financing by loans also represents social views about individual responsibilities. It is effective in professional education where the risks are small, as compared with programmes less driven by employment considerations. The poorest students, although culturally reluctant to take loans, seem to have gone heavily into debt, with a risk of default in repayment that endangers the whole system.

iii) *State–funded institutional aid*, which directly subsidises the universities, is therefore included in their budgets, and distributed by them on their own criteria of selection, especially merit criteria. These subsidies have been developed since 1982, representing $60 million in 1986/87, i.e. more than one and a half of the Cal Grant programme. This system provides flexibility for universities — especially UC — to support selected students as part of their policy, but it is not very consistent with the overall philosophy of student aid which is personally rather than institutionally targeted in order to favour individual choice. But it is consistent with the fact that independent universities can do the same with their own funds.

iv) *Non–official aid*, paid by each university from its own funds, or out of specific private scholarships funds. In the independent sector, as only one–third of its students received public grants — half the proportion which prevailed in 1970 — 40 per cent of the total aid to students comes from institutions' own tuition or other private resources. A vicious circle forms as this attracts more students to the private sector and calls for increases in fees. In the public segment at UC in 1986, 36 per cent of students' aid came from private sources, permitting the University to give an average $5 400 to two out of three graduate students.

All in all, in California in 1985, 330 000 students benefited from these aid packages (including loans) to a sum of $1.5 billion. But only half of the applicants for student aid were able to benefit, and we heard that the procedures are complex, psychologically inquisitive, and discouraging for impecunious students. Finally, the 1986 CPEC *Report* (*op. cit.*) on student aid judged that "financial aid has done little to increase the participation rates of low income groups in higher education".

The Evolution of Public Budgets in Recent Years

Looking now at the evolution of the general appropriations of the State of California from 1980/81 to 1987/88 (*The Twenty–First Century*, Display 28, p. 207), we read that the University

of California's funding increased by 76.9 per cent over the period, the CSU 51.8 per cent, but by only 20.8 per cent for the community colleges.

Table 5.3 shows that, recently, important adjustments have been made in the distribution of the state general funds from 1983/84 to 1988/89:

Table 5.3. **Comparative Evolution of Public Establishments' Budgets 1984-1988**
Evolution of State General Funds' Budgets 1984/85 through 1988/89

	1984/85	1985/86	1986/87	1987/88	1988/89
	Per cent increase over previous year				
California Community Colleges	1.9	5.1	7.4	7.1	6.6
University of California	13.4	12.8	9.1	6.2	4.5
California State University	10.8	9.1	7.7	6.9	3.9
State General Fund	12.4	9.1	7.1	4.1	6.9
Post-secondary education's share of total General Fund Expenditure	14.9	15.0	15.7	16.0	15.1

Source: Office of the Governor Press Release 499, 1988; Assembly Ways and Means Committee, *News Release*, July 8, 1988; *Governor's Budgets* for various years and other information on AB 1903 (Vasconcellos) and SB 2172 (Campbell).

Here again the trends are clear. The larger growth rate for UC and CSU from 1983 to 1985 has become, in the current budget, lower than that for the community colleges. This illustrates a growing concern for the performance of these colleges. There has been quite a dramatic change, especially when compared with the rate of growth of the state general fund, and the post–secondary education share of general fund expenditures (Table 5.3, last line).

The UC budget in 1988/89 was lower by $53 million than the amount originally proposed by the Governor in January 1988. The University will have to consider increasing non–resident tuition and to delay several programmes, as the 1988 Fall enrolment included 2 900 more undergraduates and 800 more graduates. The 1989 enrolment may have to be reduced to the 1987/88 level. For the president of the University of California the prospect is worrying. Until the year 2005, he expects a total average annual growth of the state general revenues of 8.5 per cent in nominal terms, but due to the Gann limits, appropriations would only approximate 7 per cent. Yet, to realise its growth plan, the UC would need a rate of 9 per cent, leaving a gap until then of $1 billion.

Furthermore, as we have already mentioned, Proposition 98 might even worsen the UC share of the budget. If the state revenue should slow to a rate of 1 or 2 per cent, the University would suffer a budget cut. This is not an improbable situation, as the 1988/89 reduced rate of growth of the state budget is due to the decrease in revenues (in 1987/88 more than $1 billion lower than projected); and the prospects for 1989/90 are similar. The budget is only $163 million under its Gann limit, which forces the Governor to restore his "uncertainty reserve" to $1 billion. The constraints of the Gann limits are now strongly felt.

As for the Student Aid Commission, it will receive this year an increase from the general funds of the State of California equal to 6.6 per cent, just enough almost to compensate for the reduction in federal funding by 24 per cent. Here again the growth in demand would seem to be able to absorb more funding, and possibly an improved administrative efficiency. This would become

an urgent problem if universities, squeezed by the Gann limits and Proposition 98, were to be authorised to increase their fees in a substantial way.

In conclusion, we would mention that budgetary constraints call into question the viability of the basic long–term policies of the different segments of Californian post–secondary education, subjecting them to a more systematic performance observation. Some long–established practices may have to be re–evaluated, especially since they concern recruitment policies of students and faculties, undergraduate studies, instruction strategies, student fees, research, etc. A renewed effort of public communication may be needed to provide more precise information concerning appropriate criteria to be used in comparisons of performance, and to overcome ambiguities perceived by the general public concerning the finance of education services in their society.

NOTE

1. *Proposition 13* is a constitutional amendment accepted by the people of California in 1978, which established a ceiling on taxes on homes and other real estate property. Since the real estate tax is the major source of local funding for schools and other institutions, this necessarily restrained resources available for education. Following California's leadership, numerous states have taken similar actions aimed at reducing or halting the growth of local taxation.

Chapter 6

CALIFORNIA AND INTERNATIONAL EDUCATION

The Pacific Rim

Both during and since the Second World War the United States has been a world leader in politics, military affairs, and economics. Education and culture are no exception: intellectuals around the world have recognised the contribution of American higher education in research as well as education. Co–operation in this field between the United States and Europe has been especially close. The United States played a large role in Europe's recovery from the devastation of war: the Marshall Plan supported the rebuilding of Europe, and economic reconstruction aided the rebuilding of education. Now it appears that we have come to a turning point in post–war history. The First World, comprised mainly of North America and Europe and facing each other across the Atlantic Ocean, possesses as great a power as ever to influence world economics, politics, security, and the realm of scholarship, education, and culture.

At the same time, however, radical change is occurring in the Pacific Region, outside the domain of Europe and North America. Japan's post–war recovery has been striking. In April 1964 it became the only Member country of the OECD with a non–western cultural tradition. At the beginning of the 1960s, Japan held a 3 per cent share of the total world GNP, but today it has surpassed 10 per cent. In 1987 it had one of the highest levels of per capita income in the world. In addition, in the early 1980s the OECD designated the four regions of Hong Kong, Singapore, Taiwan and South Korea, which are situated on the eastern edge of the Asian continent, as Asian newly industrialised economies (NIEs). The rate of economic growth in these regions is extremely high.

Developments in the politics and economics of the Pacific are not always smooth: in Central America, the Indochina Peninsula, and the Korean Peninsula there is long–standing political instability; between the two political powers of China — Taiwan and the continent — there has been no reconciliation. It would be too hasty to conclude that the "Atlantic years", during which the world was dominated by Europe and the United States, are ending and that we have entered a new age of domination by two centres of power, the Atlantic and the Pacific. And to assert that we have moved from an Atlantic to a Pacific age is even further from the truth. Nevertheless, the Pacific Rim is increasing in importance in world society and carries with it some crucial problems.

The western world is represented in the Pacific Rim by the west coasts of the United States and Canada, as well as by Australia, New Zealand, and the west coast of Latin America. Among these, the State of California clearly carries the greatest weight, not simply because of its geographical location but also because of its involvement in the economics, politics, and culture of the area.

According to *The Twenty–First Century*, 80 per cent of the trade passing through California's ports is with Pacific Rim countries. Twenty years ago the total GNP of these countries was one–third that of the United States, but now it has reached two–thirds. In addition, financial institutions

from these nations have direct investments in California, and their companies have constructed factories there. The sixth largest economy in the world, California, with its two centres in the Los Angeles and San Francisco Bay areas, links the Pacific Rim and the rest of the United States.

From the data quoted in *The Twenty–First Century* (p. 134), the State of California is seen to exhibit the characteristic of the racial melting pot that is part of America's founding spirit. In the year 2000, non–Hispanic Whites will make up between 54.8 and 58.2 per cent of the population, and the total of those who until now have been called minorities will number less than 50 per cent. There will be between 7.1 and 7.6 per cent black people, and the majority of the rest will be Hispanic and Asian immigrants and their descendants. Thus, the human resources of California and the countries of the Pacific Rim will not be completely different culturally.

There are at least two important points to remember in the internationalisation of education in the Pacific region: first, as the case of Japan clearly indicates, although as a Member country of the OECD it has been westernised (and/or Americanised) to a great degree in the areas of economic, political and educational development, it has clearly maintained its indigenous culture even to the present date. Japan's modernisation has not been identical with westernisation. This dual nature seems to be widely diffused throughout most countries in this region except for those that show a western cultural heritage such as the United States, the west coast of Latin America, and Oceania. In this sense, international relations in the Pacific region remain different and difficult compared with their counterparts in the Atlantic.

Second, it is also important to bear in mind that nearly all countries of the Pacific, again except those representing the western world, are late developers. Even Japan, which enjoys a high degree of economic success, only became a modern state in the latter part of the nineteenth century, far later than most countries of Europe and North America. Most other Pacific countries were newly born in the post–Second World War period and are necessarily in the stage of dealing with difficulties, both domestically and externally, in the process of building up viable modern states.

Post–secondary education in California both reflects and influences economic, cultural, demographic and political structure. It can play an important role in securing peaceful development in the Pacific Rim countries, which are undergoing radical change. The United States and all the countries of the First World have a deep interest in the present state and the future of the Pacific Rim. Californian policies for higher education will be highly significant in shaping the coming international society.

Internationalisation

As an advanced economy, where not only industrial technology but all forms of modern services could be exported increasingly through joint ventures, California should depend more than in the past on the strengthening of its links with the rest of the world. We have mentioned the importance of the Pacific Rim which certainly deserves special efforts by California to catch up with its spectacular potential development. But Western Europe, especially after 1992, will probably also be a major partner in commercial and cultural exchanges, and Eastern Europe too may be more active in international exchanges. The increasingly pluricultural character of Californian society could be a major asset in such an extroverted expansion. A deeper understanding by California of other civilisations and languages, the creating of stronger and more durable networks of exchanges, and co–operation with foreigners will appear more necessary.

The international character of science and scholarship has been reflected in universities since their first appearance in medieval Europe with Latin as their *lingua franca*. From the fifteenth century the tension between Catholic oecumenicism and nationalistic separatism has been a no less central feature. But in the twentieth century, with the development of a worldwide economy and

the rapid communication systems commanded by scientists, the international interdependence of research has had new impetus. The problems of internationalisation have turned more on securing cultural, political and trading links between countries. English has spread widely as the modern equivalent of Latin as the common international language of airways, universities and commercial exchanges. But encouraging sensitivity to national cultures remains an essential task for educational institutions. Thus, "Stanford in Oxford" or "Berkeley in Rome" are familiar features of contemporary undergraduate programmes.

California is continually enlarging its international relations in these ways while Europe, with a new phase of development of the European Economic Community planned for inauguration in 1992, is making serious efforts to strengthen and popularise its connections across national frontiers. For California, however, the major thrusts of outreach are towards the Pacific and Latin America.

Among the various activities of Californian post–secondary education relating to the changing international society, two programmes at the San Diego campus of the University of California are particularly interesting: one is the Graduate School of International Relations and Pacific Studies (opened in the Fall of 1988), and the other is the Fifth College, inaugurated at the same time. In them we can see the special characteristics and future course of international education.

At universities such as Stanford and UC Berkeley, there is already excellent research and graduate education on the Pacific region, primarily in the humanities but with increasing application of social science approaches that reinforce them. These contributions will continue to be indispensable, but the rapid development in this region also demands the training of journalists and of specialists working in national and international political, business, and financial organisations. A special feature of the San Diego graduate school is that it is the first specialised educational institution in the state dealing with international relations. Although the school places great emphasis on the humanities, it also encourages deeper research on the problems the countries in this region are facing in administration, economics, medical care, technology and security, and attempts to link the various programmes to one another. The designation "Pacific Studies" might suggest that the area of enquiry is narrowly limited but this is not the case. As the term "international relations" implies, the San Diego school endeavours to deal with global problems, including those of Asia and Latin America, the Soviet Union and Eastern Europe. Teachers and students will be coming not only from America but also from the Pacific Rim and other parts of the world.

However, as research in graduate schools advances, there must be a parallel effort to improve the content of education. The Fifth College has an ambitious plan attempting to internationalise the general education curriculum. Students with different majors entering this college study a number of different societies and civilisations, using the approaches both of the humanities and of the social sciences. Languages, composition, art, and mathematics are also required subjects. This should be an interesting experiment in international education.

There are other important Californian experiments in developing an international slant in research and education, too numerous to mention here. Such projects are not limited to the advanced research and education of Stanford, the University of Southern California and the University of California campuses at Berkeley, Los Angeles and San Diego. On the nine UC campuses, the 19 California State University campuses, and in all the community colleges, encouraging international education is a major issue. All these schools are developing the study of foreign languages, education based on regional research, and study aimed at an understanding of different cultures. Much remains to be developed but serious efforts are widespread.

There are several questions that are especially important in relation to these developments: first, how can co–operation among the institutions of higher education in the Pacific Rim nations and other privileged zones be strengthened? According to *The Twenty–First Century* (p. 84), UC

and CSU have not only encouraged students to study abroad but have also established foreign centres for research and education. The University of California has 30 centres abroad, including 15 in the Pacific Rim, and the many campuses of the CSU system are making various efforts to extend foreign contacts. Even community colleges are working to create opportunities for short periods of study overseas for their students.

Now, however, a major change is necessary in co–operation with institutions of higher education abroad. So far, the Pacific Rim countries have, for the most part, been passive beneficiaries of western, including Unites States, influence in economics and in education and research. In the early 1960s, however, when Japan became a Member country of the OECD, financial and economic relations between Japan and the First World needed reform, in the direction of mutual dependence and reciprocity. On the one hand there has been Japan's closed, protectionist domestic market, and on the other the low productivity and competitive weaknesses of the Unites States and Europe. This has resulted in trade and other economic frictions. Even though negotiations between the East and the West of the OECD area, aiming at mutual dependence, have continued since the early 1980s, a stable relationship has not yet been achieved.

Japan's higher education system is composed of over 400 four–year colleges, 600 junior colleges, and a number of graduate schools. The employment of faculty and admission of students to the university is even more closed than the economic market. Japanese universities will have admitted 18 000 foreign students by 1988, but it is clear that the internationalisation of higher education will continue to be an issue for some time.

However, the future of the Pacific Rim depends on the expansion of research and on the cultivation of human talent to allow co–operation across national borders. In this region many countries have not yet achieved Japan's level of economic success. Expanding the international character of higher education throughout the Pacific Rim, rather than limiting it to advanced areas such as California, will be a major task.

How, then, can we improve contacts between universities in the countries of the Pacific Rim and the overseas centres? In Japan, the inauguration of co–operation between a Stanford University Kyoto Centre and Kyoto University is scheduled for 1989, and this sort of experiment must be further developed. In other regions, we find that the professors and students in El Colegio de Mexico in Mexico City are not only Mexicans but include people from many Latin American countries. Hong Kong University was founded by the English in the latter part of the nineteenth century as a colonial university, but today is a successful example of a school made up of international professors and students.

We now need a comprehensive study of the institutions of higher education in the Pacific Rim countries, with their divergent histories and characteristics. On the basis of such a study, policies could be formulated to strengthen international co–operation. Within the region, Californian post–secondary education is already many steps ahead. It could provide a model for regional activities in the future.

There is also the question of the study of foreign languages. According to *The Twenty–First Century* (p. 86), the number of students enrolled in Californian public schools from kindergarten through twelfth grade is 4.1 million, but of these only 4 392 are studying an Asian language. This is one of the most difficult problems for American education. Because English is the international language, many Americans make no attempt to learn a foreign language. But in Australia, which is also an English–speaking nation, 0.3 people in every 1 000 are studying Japanese. If we are hoping to increase opportunities for co–operation among people of different cultures, there is an urgent need to emphasize the study of foreign languages. We cannot internationalise post–secondary education if the curriculum from kindergarten through the twelfth grade virtually ignores other languages and cultures.

Chapter 7

POWER, POLICY AND PLANNING

In Chapter 4 we described the Californian variant of American post–secondary education, placing it in the spectrum of political economies of education which we outlined in Chapter 2. We now look at it from the aspect of planning. From that point of view it appears as having considerable affinity to the second group of mainly European social democracies, albeit with shared power among private interests and mixed or plural funding from federal, state and private sources.

In California in the second half of the twentieth century the state has come to occupy a central role in educational development. We must, however, remind ourselves that nineteenth–century California made rather sparse provision for its universities and that today, as traditionally and unlike other American states in the West and North East, half of the funding is from private sources. We should repeat too that there is no central department of higher education and research in the Office of the Governor. Many other states of the Union have created boards with direct powers of co–ordination over the education system as a whole. But many Californians hold that there is an inverse relation between central state control and academic distinction. Though it is with the political system, i.e. with the Governor and the Legislature, that responsibility for general policy resides, the search for organised efficiency has increasingly brought in advisory and evaluating bodies at a high level, and attention to educational policy has always attracted influential lay citizens.

Power and influence are negotiated between legislators and bureaucrats, public and private authorities, professionals and laity. The Master Plan of 1960 was devised mainly by eminent academics. Revisions drew in more laymen, and the most recent revision (1985–88) has been shaped considerably by political representatives in close consultation with public opinion. The Commission for the Review of the Master Plan for Higher Education was composed of 16 lay members, five segmental representatives, four appointees of the Governor, three appointees of the Speakers of the Assembly, three of the Senate Rules Committee and one representative of the California Postsecondary Education Commission. The Legislature's Joint Committee received the Commission's reports, conducted hearings and prepared recommendations for the Legislature. The Governor's Office and the Joint Committee of the Legislature for Review of the Master Plan both exercise considerable influence in translating advice into legislation and implementation. The reports of the Joint Committee offer, as we shall see, strongly worded appreciations of the equity dimension of the whole system of post–secondary education, and formulate bold recommendations.

Permanent advisory commissions are responsible for analysis, evaluation, long–term planning and co–ordination; and they are responsible for proposing changes in the working of the system within the framework of the enacted Master Plan. Since 1974 the central role has been played by the California Postsecondary Education Commission (CPEC), a statutory body charged with advising the Governor, the Legislature and the governing boards on a variety of issues, assisted by many advisory groups appointed by the segments, and the executive director. There are also

voluntary committees for intersegmental co–operation such as the California Education Round Table — defined by its initiator (David Saxon, then president of the University of California) as a "volunteer public interest coalition". Members of the Round Tab included the chief executives of the three public segments, the Chair of the Association of Independent California Colleges and Universities (AICCU), the State Superintendent of Public Instruction, and the Director of CPEC. Co–ordinating boards are the dominating form in California but most are regulatory, whereas CPEC is an advisory board.

We have been left in no doubt that the representatives of the segments in these high–level advisory commissions exercise much influence on proposals for change. In particular, the prestige and weight of the University of California is strongly felt. The Chair of the Round Table rotates among the segments. In the case of the community colleges, however, it appears that the power and influence of the legislators outweigh that of the central representatives. Problems remain in this segment. They were dramatised by the resignation of the chancellor, Joshua Smith, in 1987. Their solution was perhaps adumbrated by the appointment of a new chancellor, David Mertes, who is a known supporter of local college autonomy. New proposals for the community colleges aim at a better balance between the Legislature, a reinforced central board able to negotiate more efficiently with the political authorities, and local boards encouraged to maintain a lively interaction with the local environment. Proposals are also in train to change the financial system, making it closer to university budget management. This will be no easy task, and the principles as well as the prospects for application seem controversial: there are difficult ambiguities involved in decentralising a diversified system while maintaining an integrated policy for the segment and the system as a whole.

The Californian variant in the direction of advice rather than central control reflects the autonomy of the two state–supported university segments: each one has strong leadership from an independent board and a president or chancellor designated by the board who depends for his or her success on remaining responsive to the academic interests in the system and to the demands and sensitivities of those who are served by post–secondary education in the wider society. The political constituency of post–secondary education in California is as wide and deep as the system itself is developed. The "customers" in the professions and in business enterprise, overlapping with the developed organisation of alumni, provide an environment which both supports but also challenges the skill and authority of presidents and chancellors.

The private sector also has its place and its autonomy in the system as a fourth segment, enjoying the powerful presence of rich and famous independent establishments, enthusiastically supported by their graduates, and by the organised business and other interests which they serve.

Policy Formation, Evaluation and Co–ordination

In *The Twenty–First Century* (p. 40) we read that over the last three decades California seems to have acknowledged that periodic evaluation of its higher education is necessary to validate the 1960 plan, to endorse new policies and to look to the efficient interrelation of the various parts of the system. "These important linkages are what make California's system of colleges and universities a system"; but, Mr. Condren continues, "they rarely receive close attention in regular legislative hearings where attention is focused on individual bills, annual appropriations, and yearly program augmentations. Thus, into the foreseeable future, California will probably undertake major master planning projects in postsecondary education every 10 to 12 years, typically at the initia-

tive of the Legislature or Governor or both; and these reviews will involve the energies of higher education officials for not less than two years at a time." Clearly then, CPEC is a state agency with serious responsibilities thrust upon its staff of 53 civil servants. The challenge to it is to plan, to evaluate, and to co–ordinate a large and developing system. In practice, however, it is much more an agency for collecting data and channelling advice.

CPEC has to play a difficult and multi–faceted role, as may be seen from the six themes listed in *The Twenty–First Century* (p. 71) as its current areas of concern:

"1. Long–range planning to meet California's educational needs;
2. Linking educational institutions more effectively;
3. Ensuring equal educational opportunities in postsecondary education;
4. Incentive funding, assessment, and outcome measures: the state's role;
5. Financing postsecondary education; and
6. Developing effective statewide programs."

The organisation is statutory. It requires active diplomatic leadership and the conduct of delicate relations between sometimes competing interests, political realism and persuasion in convincing ways which maintain both independence and creativity. So far, even after 28 years, the revisions to the original Master Plan have been adaptive or incremental in character. There have been no changes without widespread consultation and discussion with the interested parties, and no action without the prior establishment of a large consensus in both political and academic circles. And reform has followed the maxim of hastening slowly. The intervening discussions have had high visibility and sustained attention from politicians. The public at large have had access to them and, we may say, have thus engaged in a process of collective political learning.

We have the strong impression that CPEC has been successful in many of these activities but that it cannot surprise anyone if there are failures and criticisms. Some might argue, for example, that CPEC might have had a higher profile in communicating to the Californian population through the media all of the dilemmas and debates relevant to the development of educational policy; but others would emphasize the necessary cautiousness of the state agency. For ourselves we are inclined to take a severely social–scientific view of the role of the Commission in gathering firm evidence and sophisticated analysis of the performance of the system as a whole, including such sensitive problems as the joint search for both equity and quality in the various universities and colleges scattered throughout the state. We know of no country in which the social–scientific base of political debate about access, retention, the quality of different curricula and the efficiency of different lines of expenditure matches the potential capacity of social–scientific analysis. Looking across the OECD countries, it is difficult to find as much documentation on any particular system as is provided by CPEC for California. At the same time we regard it as worthwhile, for the benefit of all Member countries, that the Californians be challenged to state how they see the future of CPEC as an instrument for raising the intelligence of political debate on the reform of their education system so as better to attain the goals of equal access and high quality which they have set themselves.

In the process of the Master Plan revision, the role and performance of CPEC have been subject to some evaluation. The Commission for the Review of the Master Plan (CPEC, 1987) emphasizes the need for "unity" through "strong, structural links among all the segments in the areas of policy formation, operations and evaluation". Such co–ordination is necessary if equity, quality and efficiency are to be achieved. The report contains as many as 40 recommendations aimed at removing shortcomings in intersegmental co–operation, the mobility of students, the governance of community colleges, the realisation of equity, the attainment of high quality in general education and the development of new instructional technologies.

Many of the recommendations are precise technical or organisational proposals which would put exact legal constraints on the working of the system. Others are intended to reinforce established general principles.

The first proposition of the 1987 proposals for revision of the Master Plan is that the California Education Round Table move from its present voluntary status to become formally responsible for the "necessary operational linkages" between the sectors. It is further recommended that the Round Table be assisted by an Intersegmental Coordinating Council (ICC) made up of senior staff from the segments and from CPEC. This body would act as an administrative, co–ordinating and recommending staff agency to facilitate co–operation among the segments.

There is an emerging problem for CPEC in these developments. *The Twenty First Century* (p. 76) puts it neatly and fairly: "the new Round Table introduces — for some — an element of uncertainty into California's coordination picture". Some have taken the view that the functions ascribed to the Round Table would be more appropriately performed by CPEC; and others see the new range of activities, and the structure of the Intersegmental Coordinating Council in particular, as additional bureaucracy. On the other hand, yet others see a clear division between the Commission and the Round Table. The former executive director of CPEC, William Pickens, himself takes this view but cautions that "the Round Table must concern itself with the *administration* of programs". It is not easy to delineate clearly between policy and evaluation by CPEC, and the operational, co–ordinating mission of the Round Table and the ICC. One obvious danger is that while CPEC holds the responsibility to evaluate the work of the Round Table and to report periodically to the state government, it might gradually be led more into the role of information gathering, long–term planning and overall evaluation, without much direct co–ordinating power. This general question deserves more discussion. It has to take place against the background of recognising that California belongs to the minority of states where governing boards are only advisory as distinct from regulatory.

Another notable recommendation of *The Master Plan Renewed* is that the Round Table should oversee "a statewide coordinated development and application of new information technology networks to meet instructional needs...among the public and private sectors". Such a proposal, if accepted, would undoubtedly give the education system some benefit from more systematic use of the highly developed expertise of Californian telecommunications and information technology. It will also, however, carry with it very real problems of persuasion and organisation. Technological change of this kind runs counter to established interests, and in this case is likely to encounter the reluctance of some teachers, especially those in the segments which are most unionised. There are in any case grounds for controversy about the educational value, learning efficiency and distortion of content that accompanies such instructional devices. Nevertheless, the prospect is exciting and, like that of the Open University in Great Britain, has potential lessons for throughout the world. Our traditional notions of teaching and learning are clearly in need of revision. And, not least, the "value for money" implications of the capital–intensive teaching methods of information technology must be a major point of discussion for the mass education systems of the future.

Chapter 8

SOCIAL ORIGINS AND ECONOMIC DESTINATIONS

It is already apparent that Californian post–secondary education has to be seen as a system of open access to the three public segments, but one within which there are differentiated advantages of tracking through what we have characterised as a tripartite system. At the beginning of Chapter 2 we placed America ahead of other OECD countries in its advance towards universal secondary education and in its plenitude of provision for post–secondary experience. Nearly three–quarters of Californians now graduate from high school and well over a quarter attain the Bachelor's degree.

But we have also noted that access *de facto* is unevenly distributed between the ethnic groups. Asians, Whites, Hispanics, Blacks and American native Indians, in that descending order, are in fact taking advantage of the opportunities offered. The drop–out rate of 22 per cent for Whites during high school has to be compared with 33 per cent for both Blacks and Hispanics and 40 per cent for American Indians. Asian and white high school graduates achieve eligibility for entry to UC or CSU above the 12.5 and 33 percentages laid down by the Master Plan for these two segments. In 1986, half of the Asian public high school leavers made themselves eligible — 33 per cent for the University and 50 per cent for the State University. The comparable figures for white students were 16 and 47 per cent, for black students only 5 and 11 per cent, and only marginally better for Hispanic high school leavers.

This pattern of racial differentiation is even more marked in the statistics for admission as distinct from eligibility. No wonder then that *The Twenty–First Century* concludes that "Low numbers of minority students graduating from high schools, low percentages of them eligible for admission to the State University or the University, and — most important — low proportions of them enrolling in the state's higher education system represent a serious state policy issue. In the face of these rates, a clear priority goal must be to transform the system so as to assure considerably higher levels of access." (p. 135)

The problem of substantive as distinct from formal equality of opportunity in education is to be found all over the world and has been a major preoccupation of sociologists of education, politicians, reformers and administrators throughout the period of expansion since the Second World War. We have elaborated this in Chapter 2 and described it as the threat of a dual society in Chapter 4. It manifests itself in California most particularly as a problem of ethnic assimilation. That it should lie at the centre of the concerns of those who lead opinion and shape policy in California is perhaps all the more commendable when one considers its remarkable invisibility in the life of the average prosperous suburban citizen. In California the sun shines on both prosperity and poverty.

To visit the campus of the University of San Diego with its Spanish renaissance architecture, its elegant avenues, its impeccable common rooms, its healthy young men and women, every one of whom seems to have been nurtured to superb physical fitness and glows with vivid health and

earnest commitment to study in bright clothes fresh from the cleaners, is to enjoy a scene of idyllic realisation of the hopes of those who plan for universal higher education. Such a delectable view distracts attention from the Hispanics who never reached the campus gates. Or to go to the University of Southern California and again to see busy and purposeful students, strolling between classes in the shade of the jacaranda trees, is to have one's attention drawn away from the human waste and degradation a few streets away where young people of the same age are trapped in the drug culture of downtown Los Angeles.

The vast numbers of learners on the way to success and reward in middle–class occupations on the public and private campuses of the universities and community colleges throughout the state is an encouraging reality. A million students provide firm ground for optimism as well as temptation to self–congratulation. But the unassimilated minority is nonetheless a threat. The unsolved problem so characteristic of all OECD countries remains a problem even in a state which has gone so far towards the provision of educational opportunity for all. It is a sharp reminder of the relevance of the third type of education we distinguished in Chapter 2: education as a positional good.

This then is the background for the continued drive within the context of the Master Plan towards improving the level of access to higher education and towards raising the rate of retention of those who enter. The problems associated with entry and retention are usefully distinguished in contemporary policy analysis. Access to some form of public post–secondary education has emerged in California as a citizen's right, and strenuous efforts have been made by "affirmative action" and other policies to convert legal formality into existential substance. At the same time, private universities and colleges have committed impressive portions of their operating budgets to enable themselves to become colour–, gender– and class–blind in their admissions. But then, and partly because of these efforts towards a wide social representativeness of entry, difficult problems arise with respect to retention, especially in the public institutions. Access, it turns out, is not enough: it has to be translated into success, and that process challenges education to go beyond conventional pedagogy and explore new dimensions of educability among women and ethnic groups and all those whose social origins are less endowed with the informal learning, the material circumstances and the motivation to achieve in an educational milieu.

The strategic response proposed by the Californian Master Plan was to achieve both access and excellence or quantity and quality through, on the one hand, open admission to the community colleges in every locality of the state and, on the other hand, through stern standards of admission to the University of California and the State University campuses. And the system as a whole was to be unified by the possibilities of transfer, with special attention to ethnic and economic opportunity. The most recent account of the results has been presented by the Legislature's Joint Committee for the Review of the Master Plan in its Final Report, *California Faces...California's Future: Education for Citizenship in a Multicultural Democracy* (March 1989) in which it is asserted that "transfer is the promise at the center of California's entire system of higher education" (p. 28). The trends in rates of transfer are shown in Table 8.1. There have been alternating increases and decreases in the number of community college transfers to the University and the State University in the period since 1965. There was a peak — as the table shows — between 1971 and 1975, with some tendency to decline in the 1980s. Nevertheless, there has been an increase in the percentage of high school graduates who enter the community colleges and subsequently transfer to the other two segments. Between 1982 and 1987, for example, this percentage increased by 4.9 per cent, even though there was a substantial drop in the number of high school graduates who entered the community colleges during that period.

It should also be noticed that there is much variation between community colleges in their rates of transfer. Thus, in the Fall of 1986 four individual community colleges sent 200 or more transfers to the university (Santa Monica, Diablo Valley, Santa Barbara and Orange Coast) while

52 others of the total of 106 colleges sent less than two dozen. We should also notice, incidentally, that transfer is by no means a one–way traffic. Some students begin in the four–year colleges and

Table 8.1. **Transfers to UC and CSU as a Percentage of High School Graduates Entering Community Colleges Two Years Earlier 1970-1987**

	High school graduates transferring to community colleges		Total transfers from CC to UC/CSU	Transfers from CC to UC/CSU as a % of high school graduates entering CC two years earlier
	%	Numbers	Numbers	
1970/71	46.0	129 358	34 225	–
1971/72	45.6	128 918	38 700	–
1972/73	41.8	122 043	41 784	32.3
1973/74	41.3	119 046	41 282	32.0
1974/75	41.3	119 652	40 459	33.2
1975/76	43.1	126 688	43 539	36.6
1976/77	41.7	120 702	39 776	33.2
1977/78	43.3	123 561	40 393	31.9
1978/79	41.4	117 510	37 802	31.3
1979/80	42.1	117 269	36 077	29.2
1980/81	43.0	116 518	35 918	30.6
1981/82	42.1	109 556	34 804	29.7
1982/83	42.8	113 815	34 961	30.0
1983/84	37.9	99 359	35 579	32.5
1984/85	36.3	93 521	35 391	31.1
1985/86	33.0	82 877	34 613	34.8
1986/87	–	–	32 619	34.9

Source: California Postsecondary Education Commission: *Fall 1986 Update of Community College Transfer Students Statistics*, Commission Report 87-22, April 1987.

move to the community colleges. Indeed, it was noted at the end of the 1970s that the net flow was not from the community colleges to the University of California but in the opposite direction (Renkiewicz, no date).[1]

The Joint Committee of the Legislature (in *California Faces...*) states the problem in strident language. After applauding the formal commitment of the Master Plan to both open admissions and the maintenance of high quality, the review continues:

> "At the first glance there is no dilemma in serving California's diverse people through our current system of education. Under the rubric of 'equal opportunity', the state offers the formal place and then the mechanisms of advancement through the system. After high school the structure of opportunity remains open, through the California Community Colleges, the Californian state universities and the University of California. There seems to be places enough, chances to make it, location for those who have already achieved and those who have promise.

"But we know, and the state must acknowledge, that the older logic is not sufficient. In practice, in the lives of too many of our people, it does not hold, it does not convince, and it no longer works. It offers solace to those who wish for simplicity; it gives excuses for failure, locates the blame where it is easiest: on the students and their communities. If the consequences were on the margins, restricted to a few who drop out or who fail to make it in, then the state might continue to call out 'opportunity', and accept the casual manner in which some are found winners and others losers...

"Too few persons complete college; too few realize their full potential as productive participants in the California dream. Adult illiteracy approaching 20 percent threatens the viability of our workforce and the productivity of our state. Labor shortages are predicted in most Californian cities, particularly in technical and professional areas. The numbers of permanently unemployed or underemployed deny us much needed talent, provide a constant drain on public resources, and pose a profound moral dilemma for a culture committed to equality. The state is threatened with a permanent underclass, mostly brown and black, increasingly marginalized economically, socially, and politically."

On the basis of this sombre diagnosis the Joint Committee proposes radical remedies in pursuit of a truly multicultural democracy. They see the mission of the community colleges as central, and affirm that they "deserve to be fully equal partners in both status and support. A comprehensive mission of these colleges ought not to reflect all that is 'left' when the other institutions have been set on course, but ought to reflect the priority we afford the broad education of the great majority of our people" (p. 12). On admissions and eligibility they point out that the original Master Plan defined two different eligibility pools for the two university segments — the top eighth and the top third as we have described them — but they criticise these proportions as arbitrary in two ways: they were based on the decision to restrict the numbers on university campuses as much as they were about "quality", and within those perimeters they could only approximate a division between those prepared for university and those who were not.In consequence, and to offset arbitrariness, the two senior public segments were allowed to admit up to 2 per cent of each freshmen class (later expanded to 4 per cent) on other bases than the strict eligibility criteria. The skewed distribution of students between the three segments, the Joint Committee argues, reflects a crisis of eligibility. Thus, Latinos and black Americans comprise nearly 30 per cent of the public high school graduates but make up only 23 per cent of the first–time freshmen in all of public higher education, and they are hugely concentrated in the community colleges. On the other hand, we note that at Berkeley, the flagship campus of UC, of the 3 625 students admitted in the Fall of 1987 from high school, 12.5 per cent were Blacks — a proportion in excess of their share of high school graduates and of the pool of strictly meritocratic eligibility. Thus, in this respect a highly prestigious institution has already anticipated in reality what the Joint Committee proposes for the future.

However, eligibility apart, the dice are loaded against black and Latino undergraduates in their chances of graduating from either the University or the State University. Fewer than 30 per cent of black students graduate within five years of entry to the University of California, and despite recent modest increases in black admissions, their graduation rate has remained roughly the same for the past ten years. Moreover, according to the Joint Committee, "it appears that many of the black and Latino students who drop out of college do so for reasons other than academic difficulty" (*ibid.*, p. 18).

Race and class here overlap. The Joint Committee points to the income distribution among students attending the public universities and colleges: "Forty–two percent of 'financially dependent' students in the Californian public higher education system in 1986 came from families with incomes in excess of $36 000 a year. Almost 30 percent of all 'financially dependent' students at

the University of California in 1986 came from families with incomes in excess of $60 000 a year; yet over 40 percent of financially dependent students in the Community Colleges came from families whose income was below $24 000" (*ibid.*).

While this positive correlation between advantaged background and scholastic achievement is a familiar feature of all known education systems, the logic of the Californian plan entails the determination to obliterate it. Accordingly the Joint Committee sets the target for each of the segments of Californian public higher education of approximating by the year 2000 the general ethnic, gender, economic and regional composition of recent high school graduates, both in first–year classes and subsequent college and university graduation classes. They look for policies and programmes which shall so increase access and ensure retention and success among the underrepresented groups of students that this aim will be realised; and they want the governing boards to report to the Governor of the state and the Legislature biennially on their progress towards the ultimate goal.

While reaffirming the differentiated missions of the segments, the Joint Committee also seeks reforms which include a radical alteration in the definition of eligibility. Their proposal is that CPEC conduct a study, in co–operation with the Board of Regents of the University of California and the Board of Trustees of the California State University, on the consequences which would follow if the current eligibility pool were augmented with a companion pool generated by the top eighth and the top third of *each* high school. And they want the results of the study to be presented to the Governor and the Legislature in 1990. This has to be recognised as a truly radical proposal which merits special attention.

Obviously, if this change in the eligibility rules were instituted there would be wide ramifications. The present unequal pattern of course provision in high schools and community colleges would have to be evened up by wide–ranging special programmes oriented particularly to the poorer districts and those in which the ethnic minorities are concentrated. And one could imagine that there would be a serious impact on the present residential pattern of different income and ethnic groups, as well as in the choice of different high schools and community colleges attended by students. The whole provision of college preparatory courses and transfer programmes would be called into question. There would be many new demands for increased co–operation between the university staff and their colleagues in the high schools and the community colleges. The provision of adequate courses, good counselling and new experiments in outreach programmes would all have to be overhauled if California is to arrive at its ideal of offering real opportunity for university entrance to all students.

Nor is the reform of admissions enough to guarantee the intended purpose. Attention also has to be paid to assuring the ultimate graduation of every student who is admitted. As the Joint Committee insists, "Graduation rates are too low. Only 60 percent of regularly admitted students graduate from the University of California after five years, 20 percent more graduating either later or from other institutions" (*ibid.*, p. 28). This overall rate is better than the national average but, not surprisingly, worse than the more selective independent universities. "Within the California State University several campuses have seven year graduation rates around 50 percent, but the overall rate is only 40 percent graduating in seven years...At the University of California less than 30 percent black and Latino students graduate in five years; at the California State University the percentage is even lower" (*ibid.*).

The transfer programme was always an essential part of the plan for equality of educational opportunity. It offered open admission and second chances, while protecting the high quality and justifying the selectivity of the other two public segments. The numbers of students from underrepresented social groups who reached the universities through the second–chance pipeline were never very large. But the programmes encountered trouble through three developments: the

number of high school graduates dropped in the late 1970s and early 1980s; Proposition 13 in 1978 undermined community college funding; and there was an increase in the proportion of eligible students who chose to go directly to the universities rather than through the community colleges. Thus, transfer rates dropped through the 1980s, when the need for them was growing against the background of ethnic immigration and fertility. The community colleges are the main post–secondary institutions for ethnic minorities: three–quarters of all black and Latino students enrolled in public higher education attend them. The percentage who successfully transfer to the four–year segment has remained very low throughout the last two decades. Between 1980 and 1986 no more than 14.1 per cent of the transfers to the University of California in any year were black or Hispanic. "In 1986, 84 536 black and 165 201 Latino students enrolled in the Community Colleges while in the same year 189 black students and 485 Latino students successfully transferred to the University of California" (*ibid.*, p. 30).

The Joint Committee seeks a dramatic reversal of this failing transfer function. How to do it remains part of Californian policy debate.

The Controversial Balance between Basic and Applied Research

Having discussed the problems of access or input, we turn now to those of destination or output. In our visits and conversations we saw many examples of the connection between higher education and the economy. The spirit of service to all organised interests was manifest: colleges and university departments are in active collaboration with employers in the buying of skilled people, in the use of research products and in continuing in–career education. The post–secondary system of education has two related kinds of output: research and qualified people. Our concern has been mainly with people, but there are two contingent questions which must be asked. What kinds of research are appropriate in the higher educational institutions of a post–industrial society? And what can be done to equate labour demand to labour supply, given the drive on the supply side towards producing high quality and large quantity of output from the education system?

What Kind of Research?

The answer might appear to be obvious: the rich society will become more so if it engages its talented people in the search for scientific and technological applications of direct advantage to the economy; science policy must be judged in terms of industrial relevance. Thus, when we observe the many links of the university and college research to California's industrial and commercial enterprises, we may applaud the success of a policy and encourage the further direction of that effort. We would do so in awareness of abundant examples. There is the service of Davis campus to agriculture, of UC Los Angeles and the Lawrence Livermore laboratory to the harnessing of fusion power as a replacement for fission and fossil fuel, of the Claremont Graduate School in developing mathematical models for controlled burning in the forest service, of Stanford's contribution through Frederick Terman and his students Hewlett and Packard to electronics, of Berkeley's development of earthquake engineering, of San Diego's super computer research centre, and of the new developments at the California State University Northridge where ground was broken in September 1987 for a one hundred–acre university park and a $150 million construction project which claimed to be the nation's largest partnership between a state university and private industry.

The private universities are probably more pressed — especially for financial reasons — to develop their relations with business and to focus upon applied research. But the incentives for the public segments to develop applied work and to improve the transfer of new knowledge to industries is also strong. Federal money, the most important resource for research, is now influencing priorities. For instance, the National Science Foundation favours interdisciplinary applied research linked to industry. Furthermore, the pressure on public universities to get more private funding naturally invites more sensitivity to business needs.

Everywhere the extension of applied research has become integral to overall university strategic plans. There are impressive joint research schemes to transfer technology, especially in computers, electronics and biotechnologies. Public policies, often at the federal level, have exercised pressure and provided incentive resources. In most places there is an industrial liaison office or a university licensing office especially incorporated by the university. Its efficiency appears variable, depending on the capacity of the university to produce "big hit" discoveries, to license and exploit patents as quickly as possible — and this implies entrepreneurial abilities.

Some universities are more ready than others to co–operate with industry: they include the private universities, in general, and certain state campuses like UCLA, San Diego, Davis and Santa Barbara. On the Berkeley campus the faculty seem more inclined to give priority to fundamental research. From the point of view of business, co–operation with a university permits industrial researchers early access to new discoveries. It may also incline academics to evaluate the potential for applications more systematically, and it may facilitate the recruitment of graduates by industry. Accordingly "business affiliates networks" are increasingly to be found as annexes to the university campus.

Stanford's Industrial Affiliates Program, for instance, is 28 years old. It maintains 31 programmes, with 556 member corporations (from $1 000 to $50 000 contributions), which provided $5.7 million in 1986. Business members have recurrent contacts with the relevant departments and their staff, with industrial researchers sometimes seconded to work with the academics. As is to be expected, most affiliations are with the schools of engineering (245), schools of business (154) and earth sciences. Each programme is run by a member of faculty with full responsibility for its development and reinforcement. Its Office of Technology Licensing with 14 full–time officers has a marketing function. Receiving three to four discoveries from the faculty a week, it licenses them and approaches companies throughout the world. But out of 166 licenses in 1986, only 13 generated royalties of over $75 000. One–third of the royalties go to the inventor — usually a professor with graduate students — one third to the department, one third to the University. The office aims at $8 million in royalties. In the Stanford "faculty handbook" there are some ten pages detailing policies governing research, especially the "no ties principle" and free access to the results of sponsored work. The handbook also deals with research participation agreements, student initiated research, secrecy, publications, ethical issues, copyright and patent agreements, patent policies, and distribution outside the University of "tangible research property". Individual academic researchers can take out patents but give back the money to their department, keeping one–third for themselves.

The University of California issued in 1988 its own "patent primer for faculty and staff" from the UC Patent, Trademark and Copyright Office to which all academic inventions have to be sent. Its gross income from patents reached $5.4 million in 1987 — double the 1984 level — with 308 inventions reported, 161 income–producing properties, and with the inventors receiving 50 per cent of the net royalties and fees paid to the University — net of all costs including those of licensing and protection which can be high.

One of the most committed experiments in joint research work is offered by USC in co–operation with UCLA, Irvine and Caltech. They have created industry–based institutes with six

companies and an executive director recently retired from industrial research. Each firm commits $100 000 a year for three years, the National Science Foundation commits $400 000 for five years, and the State of California $200 000 a year. Research projects are defined with the participation of industrial researchers, monitored and reviewed by mixed teams. The universities limit their overhead levies to 10 per cent instead of the normal 40–70 per cent surcharge on research contracts. There is no restriction attached to the publication of methods and results, but delay of publication leaves time for participants to take advantage of their own discoveries.

In professional schools everywhere, close links with industry and the professions are normal, through consulting, extension courses, and personal contacts. Berkeley is now considering creating a science park. UC Davis, famous for its agricultural connection, plans to use the same approach to improve teachers' training.

Such developments are getting closer to the description of the multi–university first given by Clark Kerr in his famous 1963 lectures at Harvard, where he forecasted an emerging system of higher education in California which, while itself a vast economic enterprise, also touched the lives and practice of all the professional classes and underpinned the profitable economy and prosperous society of California as a whole.

But wait. Neither Clark Kerr in the 1960s nor the President of the University of California today are correctly interpreted as being advocates of applied or "relevant" research as the most effective contribution of universities to the economy. Everywhere anxiety persists in an effort to find and maintain a proper equilibrium between research and its applications. The two activities are more and more intertwined, and the lag between scientific discoveries and their transfer into industry is getting shorter as business increasingly recognises its need for academic research for its own development. It is often argued that the time horizons of scientific and industrial work vary, and that "cultural differences" persist. Research, as seen by academics, is distinct from "development" work in industry; and the training of young scientists, even in academic engineering research, is considered to require more "basic" components and a scientific culture that is missing in applied research in industry.

This is an important issue. In Japan, most of the first–class universities are concentrating on basic science, and applied research and development is found in business laboratories, with the participation of academics but within an environment dominated by business norms. Every year three–quarters of national expenditure on research and training is paid by businesses. The drawback in Japan is that of too little public funding of such activities, which has meant a weakening of basic research in universities. In the United States, by contrast, 50 per cent of research funding comes from the public purse, and there are also many research grants from the various foundations. It is widely acknowledged that research in the United States reaches a level unmatched by other nations.

In this respect, we have already noted David Gardner's determination to foster basic research and the teaching of undergraduates from a broad curriculum of integrated humanistic and scientific studies. We are listening here, we would suggest, to the international voice of enlightenment on the cultural basis in scientific knowledge of high productivity. The issue is argued throughout the universities and policy circles of the OECD world. The current form of debate is whether we should support scientific research for reasons of cultural advantage as opposed to economic gain, as if the two alternatives were irreconcilable. We cannot enter here into all the ramifications of a controversy which is rooted in the history of Western science and culture. We would only offer two observations:

First, the tendency towards specialisation, especially exhibited in the British separation of science from the humanities at an early stage of the secondary school curriculum, has the dangerous consequence that too few humanists understand science and too few scientists can defend what

they do in humanistic terms. The need to support a tradition of basic scientific research is a precondition of high economic productivity. Thus, it has been argued by Professor D. Noble (1988) that present scientific policy in the United Kingdom, with its crude and narrow insistence on economies in scientific research and its attempts to switch research from basic to applied projects, reflects a set of attitudes which are misguided and which are turning a nation hitherto pre–eminent in science into one where the scientific culture is not shared by the whole educated class. There is insufficient pride in past scientific achievement to make it politically unacceptable for the scientific tradition to be neglected. By contrast, Professor Noble argues, the chairman of the American White House Science Council (an industrialist from the Bell Telephone Laboratory aided by David Packard, the chairman of the board of the Hewlett Packard company) affirmed that "it is essential that we return to the view that federal and industrial support of university research is an investment in our national future rather than the procurement of necessary products and services".

It is further significant that the White House document to which Professor Noble refers envisages that federal investment must at minimum keep pace with the gross domestic product; at the current rate it will double in ten years. In other words, the Americans, like the Japanese, fully appreciate the relevance of fundamental research for a productive partnership between the universities and industry. Pragmatic California does not make the mistake of limiting its efforts to applied science at the expense of basic. It understands that technological innovation is an intrinsically marketable because private and tradeable good, and equally that science is an indispensable public good, supported by the state so as to provide the foundation for lucrative trading.

Equating Supply and Demand

Our other observation is that, as we expected, the equating of supply and demand for skilled professional people is not regarded as a problem in California, partly for the reasons of flexible short–cycle education and training to which we referred in Chapter 2, in part because California draws large numbers of qualified people into the state from elsewhere, partly because the attractive opportunities of the Californian economy retain the services of the vast majority of Californian graduates, and in part because the Hispanic immigration satisfies the demand for unskilled labour.

There is, however, in the minds of some Californians the possibility that the expansion of educational opportunity in the state will not be sufficiently rapid to keep up with the shifts in occupational demand of an increasingly hi–tech economy. And by contrast there are those who entertain the traditional fears of a plethora of over–qualified recruits to the labour force. Our observation is that the equation is largely in the hands of those who shape public policy and is not at all to be thought of as the manifestation of ineluctable laws of economics. The occupational mix of a modern factory or other enterprise can be varied by policy or political decision. The state, by fiscal and other incentives, can shift the marginal advantages of different degrees of capital– or labour–intensive production. Experience in many countries over the last two decades has shown that the conditions of technology and competitive organisation largely constrain the occupational composition and the capital–labour mix of modern enterprise. But the same experience also makes clear that coherent and sustained public policies can play an important role in employment and overall productivity. Such public industrial, social and educational policies help firms to plan their development of human resources within their competitive strategies, and also facilitate career strategies for individual employees.

Professor Henry Levin (1988) has argued that organisations which provide substantial worker discretion and employee involvement in work decisions are most likely to benefit from the

availability of more educated workers and advanced technologies. It is widely believed that the application of new technologies in micro–processing, robotics and biotechnology hold out the promise of new transformations in modern economies but, as Levin sees it, "these possibilities can only be realised if educational attainments are raised to meet the new skill demands of high technology economy".

Thus, policies for research and for teaching do not have to be merely efficient responses to a sovereign consumer in productive enterprise or the professional labour market. Education can shape the economy as well as respond to it. Universities and colleges, by nurturing scientific culture, by enlightening the theory of organisation and by offering a wide humanistic and scientific curriculum to virtually all tomorrow's citizens, can make California a richer, more civilised and more solidarity–aware society than it has ever been.

NOTE

1. This was a study generated by the California Association of Community Colleges and the Los Rios Community College district (Sacramento) of students attending American River, Cosumnes River, and Sacramento City colleges in the Spring of 1982. The study showed that 12 per cent of the students had attended but not graduated from a four–year college, and that a further 7.6 per cent were graduates, i.e. reverse transfer students accounted for approximately one–fifth of the Los Rios student population.

Chapter 9

CHALLENGES FOR THE FUTURE

We began with a flattery: California was, for millions in our childhood, the hope of progress. We continued with a description: California has an advanced system of post–secondary education related to an advanced economy. We added a salutation: California is the exemplar of post–industrial society. We end now with a question: Is California the model for OECD futures? It is an ambiguous and could be a deeply political question. Models can be ideals or ideal types, i.e. they can be aims to be sought or avoided with passion, or they can be conceivable social states which social scientists can attempt to analyse in terms of the conditions and probabilities of their emergence. The distinction is crucial, for the one implies advocacy while the other, in principle, presupposes value neutrality.

We cannot pretend to be fully qualified for either mode of discourse. We carried with us to California a lifetime of more or less sophisticated prejudices from England, France and Japan concerning ideals of society, economy and education. And those who gather to discuss our report, whether Californians, Europeans or representatives from OECD countries bordering the Pacific, will be burdened or enlightened by attitudes from their own experience. H.L. Mencken once remarked that if you hear a man praising his own country you may depend on it that he expects to be paid for it. We, by and large, have found much to praise in another country. Others may or may not concur. All that we can hope to do is to offer an honest report of our impressions, drawing attention to the priorities over which reasonable people may honourably disagree.

As to the other mode of discourse — futurology — we need no reminder of the intellectual difficulties. The history of social science is littered with inaccurate predictions and, indeed, is all too prone to convey false prophesy. Moreover, our visit to California was short, our study of its institutions brief and our mastery of its documents incomplete. Furthermore, even though — as we have remarked — information on Californian economy and education is as voluminous as anywhere in the world, it too falls short of offering a complete test of such theories of social change, of the impact of education on economic and social development, and of the structure of post–industrial society, as are available to us. Again, all we can do is to arrange limited evidence for rational discussion. In short, we cannot ourselves presume to present advice to other OECD countries as to whether they could or should make California their mentor.

We can nonetheless affirm that we have found some preconceptions in California which are fundamentally similar to those of other educational policy–makers in OECD countries: they all subscribe to a value consensus; they want their people to be free, to be prosperous and to live in civilised accord. To be sure, this consensus may not extend to total agreement about the characteristics of a civilised person or an ideal society. The values of freedom, equality and order, in their shifting balance, are more or less compelling to different observers at different times in different countries. And cultural standards are intrinsically contestable. Some, like Professor Halsey, tend towards the absolutism which assumes that a Mozart symphony is more valuable than a rock

concert, that astronomy is more truthful than astrology, and that Henry James writes better prose than Harold Robbins. Others are more cautious, believing with Professor Tabatoni that Mozart in his exuberance would have approved of jazz and even rock. Certainly, cultural relativism sets continuing problems for those who would shape educational curricula. Nevertheless, the operative consensus among policy–makers in California, as in other OECD countries, is that they urge tolerance on each other and desire earnestly that all citizens are incorporated as owners of all that is best in their humanistic and scientific inheritance. This is the faith of teachers everywhere. Disagreements turn more on means than on ends. And policy disputation is confused by uncertainty as to how potent formal education can be in reshaping or improving a civilisation.

Nowhere more than in California has the vision of the progressive educationist been more clearly, perhaps even naively, expressed. Both the official ideology, and the daily utterances of presidents and provosts, announce the ideal of a democracy of skilled producers and educated consumers. Nowhere is there more optimistic determination that schools and colleges can deliver such an elevated society.

If, then, we examine the possibilities of completing the journey to the "Californian dream" while mindful of the difficulties and of our own deficiencies, we shall thereby most effectively answer the general question of how much can be learned by OECD from the western coast of America.

The first point to accept about the map of the future is that there are immovable demographic contours. Most obviously, a population which has clearly moved into the new demographic regime of low fertility and increased longevity, combined with the recent and continuing influx of young immigrants, must give particular direction to educational policy. We would point to two such demographically–based constraints on future progress. First, the cultural and economic background of the immigrants must imply priority of attention less to the post–secondary than to the K–12 stage of education. This will inevitably give rise to difficulties with the raising of resources and their allocation. The quality of post–secondary education is challenged not only by its own future needs for staff and facilities but even more by the quality and quantity of the 18 year–olds whom it aspires universally to admit. Nor is this problem a leisurely preoccupation for the twenty–first century. Already in the 1990s the first demographic wave of relatively ill–prepared minority group children will come of post–secondary age.

Moreover, there is a second demographic difficulty. *The Twenty–First Century* details the approaching high rate of retirement of existing teachers. This phenomenon is a consequence of the educational expansion of the 1950s and 1960s. It poses the challenge of replacement, not only in simple numerical terms but also in the recruiting of a teaching force which reflects the social and ethnic composition of the new generation of students. Hence, the need for accelerated identification, training and promotion of ethnic minority teachers is already urgent.

A different set of constraints can be thought of as economic. The Californian aim is not only for a multicultural society but for a prosperous one in which production is based on a scientific culture. It therefore follows that a high output of both scientists and science must be part of the programme, that talent has to be mobilised whatever its social origin, and that future generations as a whole must be nurtured in a scientific culture which at the same time carries a universal consciousness of collective interdependence. The curriculum, from infancy through all the stages of upbringing and advanced education, is challenged to offer a wide cultivation in science, the social studies and the humanities so that all may know and appreciate the culture by which they live, and at the same time ensure the scientific advance and the technological skill that post–industrial society requires. Policies adequate to match this ambition will be a stern challenge to both teaching and research and will extend far beyond the boundaries of conventional or formal education to include the educative dimension of family life, the mass media and experience in the workplace.

Third, there are recognisable political constraints. Against the background of the dream of equity there are already clamorous demands from the relatively disadvantaged groups. Political support for an education system which may well be seen by some of the ethnic minorities as having denied them real opportunity in the past could easily be withheld in the future.

Given these demographic, economic and political difficulties, we can describe the Californian future as a dramatic challenge to both resolve and resource. The scale of the problems is such that the issue of balance between planning and market forces is surely a crucial one. There is no question, of course, of subsuming educational planning into the kind of command economy of Eastern Europe to which we referred in Chapter 2. California belongs with all other OECD countries to those political economies in which an optimal balance is sought between governmental and private enterprise and funding. The practical questions come in one form or another of the issue of how to articulate state and private interests. Discussion of these balances with respect to student support, the operation of schools and colleges, the funding and direction of research, the application of science to technological advance, and the co–operation of educational with industrial enterprise can be usefully pursued in all OECD countries on the basis of what we have learned in California.

Debate on this broad issue of planning and the market is in any case especially opportune, given two facts: first, many if not most Californians are committed to the minimisation of state expenditure and the maximisation of private funding. Second, some OECD countries, especially in Western Europe, have been moving their policies in the same ideological direction against a tradition of strong state management in educational affairs. It is true that decreasing taxes provide, in particular, resources to people, who can therefore decide to allocate them partly for their personal education strategies in the schools of their choice. These tax rebates can complement public funding or substitute for it; but they are lightly effective for the less privileged groups and even the lower middle class, as they do not pay much tax, and they therefore rely on the political promises of free education for all, and thus for their own children's schooling: an historical cornerstone of Californian citizenship. This is where the priorities are, and they imply strong public support for education.

Our own tentative view is that the challenge of developing citizen opportunity in a multicultural society, of offering high quality education in science and the humanities to all, and of ensuring the renewal of a scientific and technological culture in competition with the rest of the world, is one which cannot hope to be met without extension of resources for education and therefore more systematic overall policies and planning at all levels of the education system, and particularly at the state level which has to allocate public funds. Such policies might also be addressed more actively to the problems of reconciling the search for better performances in teaching the mass of Californians and the necessity to save scarce financial resources and human expertise.

Much of what we have written may be held to support this general view. Thus, though we have admired Californian science and technology, we have also observed dissatisfaction with basic education, especially in the high schools. Similarly, though we have been hugely impressed by the expansion of opportunity, we have also noted the differentially high drop–out rates among Hispanic and black students in high schools and from undergraduate courses. The mission of the community colleges has also commanded our respect for its audacious universalism. But the community colleges are in difficulties with respect to financial support, are plagued with the threat, as Joshua Smith has expressed it, of being a parking lot for students and educational tasks left by other segments, and have a patchy and unsatisfactory record in their attempt to develop effective transfer programmes to the four–year colleges.

If we lean towards shifting the balance in favour of political rather than private effort, our theoretical reasoning turns on the distinction between public and private goods. As we pointed out

in Chapter 8, science is a public good, technology more of a private good: technology can be appropriated, science belongs to us all. It follows that the nurturing of science is a collective responsibility and therefore appropriate to the political process and to public funding. Similarly, education is at least in part a public good; and training, like technology, is a private accomplishment or property which can be bought or sold according to the preferences of buyers and sellers. Education on the other hand, through its "neighbourhood effects", is a public good: in a post–industrial and multicultural society education is an essential feature for both the integration and further progress of any country which lives by it.

Of course, the line between public and private, which perhaps the distinction between education and training only partly captures, is hard to draw. We might reasonably argue that education as a consumption or as a positional good should be thought of as private, and that only education as a production good be entitled to a place in the public realm. But at all events, all countries consciously or unconsciously make political decisions about this distinction when they construct their policies for taxation and educational expenditure. Present patterns in California can be looked at in this light, and again our tentative suggestion is that the nurturing of scientific culture, and the aims of universal access with equity between different social groups, must imply considerable support by government to education as a public good.

Whether or not this general view is justified, we must expect considerable debate about the Californian future in terms of governmental responsibility. All post–secondary institutions would like greater public support in order to face their future responsibilities for larger numbers of admissions and higher expectations of successful retention and of improvements in co–ordination with other schools and colleges. Not everyone is satisfied with the pattern of grants and loans, especially those who are most anxious to improve the ratio of educated people of ethnic minority origin. Private colleges are particularly worried about the growing tuition gap. They advocate more generous public support to students, which would leave them freer to use their own funds. Public institutions, and especially the community colleges, seek larger institutional grants to enable them to raise the quality of their offering.

Yet the sources of public finance remain severely limited in California by the constitutional constraints introduced by Proposition 13 and the Gann ceiling. Together with similar policies at the federal level, the state thrusts heavy responsibility on to private charity and private willingness to buy educational products. Of course, economic growth and a growing class of graduates give California a fertile soil for the cultivation of private generosity to the universities and colleges. But it may be questioned whether private funding is adequate to the educational ambitions that the Californians have set themselves and whether the expected increasing competition for private funding will not, in the end, prove to be disadvantageous to public universities.

The Californian state budget links growth of real expenditure to the average rate of population growth. It thus ignores the special ethnic and age structure of the population from the point of view of educational demand. Moreover, there are other areas of public expenditure which are not equitably calculated from average population growth, for example social services to the elderly or penal services to a country afflicted by growing rates of crime. In consequence, education will have to compete more sharply for public funds and will itself be a divided house, given the claims of the three public segments and those of the fourth, the independent colleges and universities.

Finally, whatever the outcome of debate about public sources of finance, and quite independently of it, the case may be made that the co–ordinating activities of the state are too weak to guarantee the administration of the journey to the Californian dream. First, it may be questioned whether CPEC provides sufficiently strong co–ordination and even whether its admirable and continuing analyses of the state of the system are illuminating enough to show Californians exactly where they stand in relation to their aim to integrate their diverse peoples into a solidary, equitable and free

society. It is not possible, for example, from existing studies to gauge exactly how open Californian society is in terms of educational achievement or occupational placement for men and women of different ethnic and social backgrounds.

Co–ordination between the post–secondary segments is largely based on co–operative procedures and dependent on the good will of the interested parties. Collective decision–making is incremental and undoubtedly CPEC has given substantial aid in long–range planning and in evaluation. It is, however, a reasonable object of debate as to whether arrangements could be improved through a clearer hierarchy (of objectives), a better demonstration of different, cumulative and sensitive factors which might create emergency situations, and of combined ways to cope with them through a clearer definition of the functions of CPEC and the Round Table. How far can monitoring and control be separated? Is there a case for more active communication and persuasion of the public through the mass media in favour of the general educational interest, and is this a job for CPEC?

We do not know, and are far from suggesting that the world be made over to bureaucrats. We do not take it for granted that the central ministries in Europe serve education better than the mixed advisory bodies, and that private supporters serve California. We do, however, incline to the view that social science analysis has not been mobilised, even in California, to the task of informing civic and political leaders of the pathways and their pitfalls towards what has to be recognised as a magnificently ambitious educational, social and economic goal.

We have enjoyed and learnt from our experience in California. We have no brief to absorb this western redoubt into Europe. If we have ventured opinions, our intention is more to encourage than to dogmatise. It may be recalled that Daniel Defoe gives to his Moll Flanders and her Lancashire husband a transatlantic life. They spent the major part of their lives in Europe — she as a whore, he as a highwayman. They were rescued by transportation to Virginia where they made an honest fortune as planters. They then returned to England to dwell at ease. They resolved to spend their remaining days in sincere repentance for the wicked lives they had lived.

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Part Two

RECORD OF THE REVIEW MEETING

(Paris, 30th May 1989)

INTRODUCTION

It was a sparkling May morning in Paris when the delegates of all the OECD countries assembled to review the relation between post–secondary education and the economy in California. There was an unusual sense of occasion. The atmosphere was enlightened partly by the sense that the visitors seemed to bring proverbial Californian sunshine from a new nation to an ancient civilisation, partly by the affinity between buoyant modernity and the sober celebration of the bicentenary of the French Revolution. The European *habitués* of international congress showed quickened interest in the news from the Californian frontier of the First World with its western outlook on to the Far East, and on to Japan which had been admitted to the western club in 1970. They were eager to learn from no less eager visitors who came with a mixture of tentativeness and pride in the knowledge that the "State o' California" had a message, and possibly a lesson, for European countries concerning the role of higher education as a means of attaining both prosperity in production and fairness in distribution among citizens.

The Californian delegation was introduced by the United States Acting Assistant Secretary for Postsecondary Education, *Mr. J. Williams*, and led by Kenneth O'Brien, the Director of the California Postsecondary Education Commission. The team included representatives of Californian higher education, led by the heads of the three public segments, David Gardner (University of California), Ann Reynolds (California State University), and David Mertes (California Community Colleges), as well as Brother M. Anderson and David Winter for the independent segment and Harvey Hunt deputising for Bill Honig from the California State Department of Education*.

Much was expected from the discussion. Both the Examiners' Report and the Background Report were repeatedly commended for their quality beyond the normal requirements of politeness. Together they were thought to provide an accurate record and stimulating analysis of the current state of higher education in California. All participants were aware that this non–sovereign state was seen by the examiners as a historic experiment. Here was a country with two remarkable features. On the one hand, it is engaged in assimilation of people from the Third World of Mexico and Central America as well as countries of the Pacific Rim, on a scale which dwarfs the colonial history of the Western European countries and the post–war experience of the Gastarbeiter system. Two thousand people migrate to California every day. One in three of all migrants to America settles in California. On the other hand, there is no country with a more clearly announced resolve to provide equality of opportunity to all its members for entry through education to a skilled, post–industrial economy. To this end it was noted that California had developed the most ambitiously expanded post–secondary system to be found anywhere among the OECD countries — a structure of educational opportunity which is intended to be universal. The system in four segments has been described, under the umbrella of an evolving Master Plan, as one reconciling the claims of high

* See p. 7 for complete list.

standards or "elitist" higher education with completely commodious provision for popular demand in community colleges. The community colleges are firmly part of the higher education system, offering the possibility of transfer to either the State University (to which direct entitlement of entry is confined to the top one–third of high school graduates) or to the University of California (which limits its direct intake to the top one–eighth). Moreover, the structure is completed by a flourishing group of independent colleges offering the same wide range of undergraduate and graduate courses as is to be found in the three state segments.

Professor Halsey, on behalf of the examiners, introduced the questions for confrontation as in effect a single question on which enlightenment might be sought throughout the day. It was, he said, the question of whether California's present could be appropriately conceived as Europe's future. This, he suggested, was the underlying implicit enquiry beneath the battery of more particular questions which forms the agenda of an international conference of crucial interest to the making of policy in higher education.

A long and lively day of detailed discussion then commanded the attention of the delegates. *David Gardner*, the President of the University of California, began by confirming and reaffirming what the examiners had seen as the commitment of California to the pursuit of the twin goals of prosperity and fairness. He acknowledged the seriousness of the challenge confronted by California which takes in one out of every three immigrants into the United States and which, one might say, amounts to a new and unprecedented phase of the tradition of Americanisation: the assimilation of racially, educationally and economically heterogeneous groups into the citizenship and labour force of an advanced country.

The assembly then proceeded through four sessions. In the first session the focus was on education for a multicultural society: in the second there was exploration of the link between post–secondary education and the economy; in the third there was discussion of resource constraints, public and private; and in a short final session there was a recapitulation of the problems of planning a mixed state and private organisation of education beyond the years of compulsory schooling.

Peter Mehas, bearing a message from the Governor of California, reminded the assembly that California now leads among the states of the union in spending on higher education — a sum of $6.6 billion in 1989–90. There is, he claimed, a determined Californian commitment to financial aid for students, to the internationalisation of studies, to maintaining Californian leadership in foreign trade and to continuing technological development. An economically dynamic future and an integrated citizenry are seen by the Californian government as crucially dependent on the vigorous and successful progress of educational policy.

Chapter 1

THE STRUCTURE OF EDUCATION FOR A MULTICULTURAL SOCIETY OF EQUAL OPPORTUNITY

In the context of California's history, its current demography, the segmental structure of its post–secondary education, and its problems of raising the rate of access and success of students from some of the ethnic minorities, the examiners applauded the Californian ambition for an educationally–led system of opportunity, and at the same time cast doubt on its capacity to deliver substantive equality. They thus drew attention to the danger of possible social disintegration in a "dual" or polarised society. In order to focus discussion on these issues, they put particular questions about the structure of post–secondary education.

Question 1.1

Given that the capacity of post–secondary education to deal with equity and quality problems is determined to a large extent by the size and composition of the pool of candidates leaving secondary education, what do the Californian higher education authorities see as their main responsibilities within the state–wide efforts to improve the K–12 system (Kindergarten through twelfth grade)?

Question 1.2

In particular, what measures are being proposed or implemented in order to increase i) *the retention rates during the last years of high school; and* ii) *the proportions of disadvantaged groups entering post–secondary education?*

Question 1.3

With respect to the future of transfer arrangements, what action is being taken either by legislative implementation or voluntarily by the segments on the proposals of the Joint Committee of the Legislature on the Master Plan in their report, California Faces California's Future: Education for Citizenship in a Multicultural Democracy*?*

Question 1.4

With regard to co–ordination of the segments, "outreach", access and retention, and linkage of post–secondary education to the K–12 system, what experiments or pilot schemes seem to be most successful?

Detailed answers to these questions were put forward by President Gardner, Chancellor Reynolds, Mr. Hunt and Chancellor Mertes. They included diverse examples of the way in which California is attempting to provide both equity and equality in higher education and is also making strenuous efforts to use the strength of the colleges and universities to improve the role of the secondary school as a foundation for mass entry and success in higher education. In recent years the leadership of higher education has increasingly recognised the need to become actively involved in school improvement. The growing number of programmes sponsored by universities and colleges directed towards improving the K–12 curriculum attests to the recognition that higher education's responsibilities are substantial. The response over the past decade has included partnership programmes aimed at preparation of K–12 students for collegiate study. It includes writing, mathematics, science and humanities projects, supplementary training for elementary and secondary teachers, diagnostic testing materials, and curriculum consultancies between the academic staff of colleges and universities and high school teachers.

President Gardner emphasized the scale of the undertaking. In the Los Angeles school district the language spoken at home is, as often as not, not English. Over 100 languages are spoken at home that are not English, therefore the completion rate in the elementary grades and through high school varies by race and ethnic group as well as class, which offers the higher education community very special challenges.

California has attempted to respond historically by structuring its post–secondary education system into four parts, three constituting the public system and the fourth the independent or privately–supported universities and colleges. With respect to the public sector, there are three distinct but nevertheless interconnecting parts. There are the community colleges which are open–door institutions of low cost to the student. Anyone who completes high school or is thought to be able to benefit from community college is welcome. There are 106 community colleges enrolling more than one million students. These institutions cast a wide net and capture, or salvage, persons for post–secondary education who might otherwise have been lost.

The second segment of higher education is the California State University system, the admission standards for which make eligible the top one–third of Californian high school graduates. The University offers a full range of undergraduate and Master's programmes in both academic and professional fields, and also educates most of the teachers of the state. There are 19 of these institutions and there will soon be 20.

The third segment is the University of California which has nine campuses, offering a full range of undergraduate work, second degrees in virtually all fields, and tertiary degrees for the major professional schools, medicine, law, dentistry, etc.

During the discussion, President Gardner illustrated from his experience of the University of California, "While we do adopt admission standards consistent with state policy that make the top 12.5 per cent [or top one–eighth] of the Californian high school graduates eligible for admission, the 12.5 per cent is an average taking the high school graduation pool for the entire state as the referent, and the 12.5 per cent masks tremendous differences among the different racial and ethnic groups in the percentages of those eligible for admission to the University of California. Of all the Asian Americans completing high school in the state each year, 32 per cent are eligible for admission to the University of California, not 12.5 per cent. Of the Whites completing high school 16 per cent are eligible. Five per cent of the Hispanic high school graduation pool qualify and for the Blacks the figure is 4.6 per cent.

"So one of the great challenges we confront in seeking to encompass within the freshman class the racial, social, economic, cultural, geographic, and other characteristics of contemporary California, is to take account of these differential rates of eligibility while maintaining high standards and high expectations, not only for the students applying and seeking admission, but after

they are admitted and proceed with their work. Accordingly, we undertake a wider range of programmes with the schools in an effort to salvage larger numbers of the racial minority students in our state. Where we are able to identify these young people at about age 12 and 13, the salvage rate is very high if we can intervene in, say, grade 7 or grade 8 and identify promising young people from the minority communities and work with them and encourage them to think about a higher education, making sure they take a course of study that prepares them for admission. In those cases the 5 or 6 per cent eligibility rate is raised to 20–25 per cent. I mention this merely by illustration for purposes of indicating that there is an array of programmes between the community colleges and the California State University, and the University of California and the schools, so as to help even up the playing field as it were for all young Californians, encouraging them to think of their opportunities and stimulating them to their best work."

Reference was made by *Professor Halsey* to the radical suggestion of the Joint Committee on the Revision of the Master Plan to define eligibility of the top 12.5 per cent by reference to the numbers admitted from each high school rather than from the state as a whole. *Kenneth O'Brien* noted in reply that the proposal of the Joint Committee of an alternative 12.5 per cent proposal had not been included in the final report of that committee.

Question 1.5

What are the potentialities and limits of post–secondary education fostering adherence to the values of multicultural democracy? Is the balance of undergraduate studies of the present colleges and universities well fitted to future Californian citizenship?

Chancellor Reynolds reminded the assembly that historically the acculturation of young people into American life beyond the family had been a task for elementary and secondary schools. But it was also well known from research that there is a high correlation between level of education and adherence to the values of a pluralistic and democratic society. Thus, the undergraduate curriculum also has its part to play.

In California there is a continuing debate as to whether the balance of undergraduate studies is well suited to the demands of citizenship in the future. There has been dispute, for example, in Stanford over the core course on western civilisation, with much pressure to include the study of non–western cultures. Opponents believe that revision has been, in effect, a watering down of the curriculum and a yielding to the demands of special interests. Supporters, on the other hand, see the changes as a recognition of the realities of Californian society and a contribution to the development of mutual tolerance in a multicultural society. At all events there is a widespread desire to incorporate multicultural perspectives and sensitivities. The universities in the 1980s have been developing a general education policy requiring recognition of the contributions to civilisation by various cultural groups and by women. Also, individual professional programmes are increasingly adopting requirements which will prepare graduates to work in multicultural settings.

Question 1.6

How far can educational reform overcome differences between ethnic minorities in their propensity to be more or less closely integrated into Californian society? Is the traditional concept of the melting pot realistic today? Can the teaching profession be reformed so as to aid student integration?

The first point to emerge here is that the concept of the melting pot, because it was one of assimilation, is no longer relevant to California where the future holds no prospect of any single majority group. The task instead is that of using the education system towards maintaining a vital and productive citizenry. The major emphasis has therefore been on strengthening the transfer process and on invigorating vocational education while using every opportunity to recruit teachers from the minority groups and prepare them to work in multicultural settings.

President Gardner, while appreciating the complexity of ethnic integration, was ultimately cheerful about the prospects. He noticed that while the first–generation Asian–Americans were markedly more successful in their educational achievement than were Hispanic immigrants, by the third generation both Asians and Hispanics were much nearer to the average for the society as a whole. The main residual worry was that the relatively poor educational performance of Blacks and native American–Indians neither improved nor deteriorated and thus stayed below the national average.

With respect to the quality of the teaching force, the Californians were aware of their problems and especially of the large numbers of recruits to teaching which will be needed by the end of the century. They are particularly anxious about the loss of teachers in the first two years of service.

With respect to the problem of success as distinct from access to post–secondary education, it was pointed out that the two processes are linked. Failure in college is typically traceable to high school experience. Members of disadvantaged ethnic groups are often admitted by special procedures and have to attend extra–coaching courses. President Gardner gave the illustration of the Berkeley campus where, out of 22 000 applications last year, there were 6 500 "straight A" students for 3 500 places. If the University had used only this criterion they would have been recruiting from the top 2 to 3 per cent of high school graduates and not the top 12.5 per cent. Moreover, the student body would thereby have become exclusively White or Asian–American. In fact, the University follows the state's Master Plan and thus achieves a better racial mix. But many of the B+ students admitted are Black or Hispanic. In short, social integration is seen here as a policy with priority over strict academic meritocracy.

The delegates were impressed by the vigorous account from the four heads of segment of the Californian system but requested more detailed information. *The Canadian delegation* asked if California is totally committed to maximising the production of people with Bachelor's degree qualifications. Were there significant rural–urban differences and was the transfer function from the community colleges concentrated entirely on minority groups? *Chancellor Reynolds* pointed out that California still does not produce enough BAs to meet its own needs in industry. A level of 35 to 40 per cent of graduates was needed, whereas in fact it was currently 18.5 per cent.

Other questions came from *Italy*, *Japan* and *Australia* who expressed concern about the needs of those who do not take a degree course. The *Australians* were particularly interested to know how well the community colleges serve those who choose a vocational education but change over to the academic track. *Chancellor Mertes* said that approximately 50 per cent of college students had transfer intentions, though a lesser proportion actually moved. The strength of the system was that students could experiment with the curriculum and defer decision about transfer until they were better informed. *The delegate from Turkey* asked what were the underlying differences between the University and the State University with respect to admissions. *The Portuguese delegate* again questioned the Californian structure from the point of view of its capacity to meet the demands of the next 15 years. The answer in many of these areas was that improvements were possible but that their strategy was always incremental and pragmatic. *Mr. O'Brien* added that in his opinion they had "not done as well on retention as on access".

International Education

Question 1.7

What are the segments doing to ensure the development of international education, including the appreciation of the cultural heritage brought to California by its diversity of ethnic immigrants?

The Californian delegation responded warmly to *Professor Nagai*'s emphasis on the importance of developing international education as well as paying attention to the problem of internal ethnic heterogeneity. *Harvey Hunt* candidly exposed the deficiencies of the K–12 system in the teaching of foreign languages. He also observed that the curriculum in geography and in history was weak from an international point of view. Nevertheless, as the Examiners' Report had indicated, there is certainly evidence of expansion of international education in California including that of foreign study programmes (in which all segments are involved) and the establishment of study centres abroad in Asia as well as Europe. Reference was made in particular to the recent development of the first professional school of international relations in California at San Diego.

Chapter 2

POST–SECONDARY EDUCATION AND THE ECONOMY

Prosperity as well as equal opportunity is part of the Californian dream. Like other advanced industrialised societies, California has a vital interest in ensuring that its post–secondary institutions both respond and contribute to the economic needs of the state and the nation. The country delegates, like the examiners, were impressed by the efforts and resources devoted to strengthening the links between higher education and the economy. In the second session they put questions concerning the adequacy of teaching and research in meeting this objective, taking due account of other fundamental missions of post–secondary institutions.

Compared to higher education institutions in most OECD countries, Californian universities and colleges have been more open and responsive to economic needs and employment requirements. But perhaps because of the very strength of this market orientation, a shift in priorities may be taking place. Various delegates noted a growing concern about the long–term effects for academic institutions of excessive vocationalisation, specialisation and responsiveness to short–term needs and outside pressures. The emerging emphasis may be less on immediate vocational relevance; more on social equity (as discussed in the first session) and, perhaps primarily, on improving quality and standards. This is not a purely internal academic preoccupation: it is an indispensable condition for enhancing the capacity of higher education to meet the broader social and economic objectives set out by the state.

General and Vocational Education

Question 2.1

What is considered to be the right balance of undergraduate programmes, in terms of liberal vs. vocational orientation, or in terms of fundamental skills, i.e. critical thinking, vs. those more directly related to immediate employment? What major reforms are being advocated for the first two years of higher education which are of common concern to all segments of the system? Is the idea of a "common core" being seriously envisaged?

The Californians were here anxious to assert the autonomy of institutions. Each college and university has its own distinctive programme of general education. Nevertheless, there is accord in establishing and maintaining the liberal arts and sciences as the foundation of the undergraduate programme. Thus, as *Chancellor Reynolds* explained it, the State University's requirements are typical. There is a minimum unit prescription in the California State University for 48 units in general education, representing about 40 per cent of the Bachelor's degree requirement. Chancellor

Reynolds was equally concerned to stress that control over the curriculum was the prerogative or "purview" of the faculty in each institution, and asserted that no state policy could succeed which interfered with this prerogative.

A delegate from the Netherlands followed up this discussion by asking about the transition between initial vocational education and further training. Entering into a contract with a business for the provision of job training, for example, puts an institution into a different position in terms of control of the curriculum and raises questions about academic values generally. For the Californian delegation, *Mr. O'Brien* replied that students not going to college or university had literally hundreds of private institutions, many connected directly to business enterprises, which offer alternative training. *President Winter* pointed out that the prevailing view is that the liberal arts colleges, while stressing general education, also contributed to the vocational tracks, in particular by offering general education as an encouragement to leadership. He thought that there was a direct pay–off in vocational success when higher–order thinking skills were taught, and saw it as a heavy responsibility to prepare students for more than the narrow vocational track. *Chancellor Reynolds* remarked interestingly that, in its efforts to recapture the previous rigour of the secondary curriculum, California ought to follow the European tradition of strong preparation in the secondary schools as a forerunner to a collegiate career.

Chancellor Reynolds also reported that discussions of a core curriculum for the purposes of transfer between the segments of Californian higher education have resulted in almost full accord. The agreement, however, describes areas rather than courses which students have to complete in order to have their work recognised by the institution to which they hope to transfer. This progress in accordance on a common core is a considerable achievement of intersegmental discussion. Underlying it, of course, is the constant struggle between those who clamour for more time to be given to specialist courses oriented to the professions and those who defend the centrality of the general education component. There was general agreement with *the Canadian delegate* who suggested that a third participant in the argument was the employer, and with the suggestion that more responsibility for strictly vocational education could be expected of business enterprises themselves. The general Californian and American emphasis remained, however, on the responsibility of the educational sphere to concentrate on general education at the undergraduate level, deferring specialist work to the graduate stage and to specialised, short, vocationally–oriented courses.

With respect to the relevance and quality of vocationally–oriented programmes:

Question 2.2

What are seen as the distinctive responsibilities of community colleges in the area of vocational education and training? If, as we have been informed, a Master Plan is envisaged for the co–ordination and division of labour between community colleges and high schools in this field, what views are likely to be held by the representatives of the two sectors? How do the Californian authorities assess the competitive position and achievements of community colleges as providers of vocational courses, compared to corporate and private institutions?

Chancellor Mertes was the main Californian respondent to this question. He pointed out that vocational as well as transfer education was retained by the revised Master Plan for Higher Education. The community colleges therefore have a double function and are in that sense comprehensive institutions by contrast with many private sector specialised bodies.

The community colleges and high schools are discussing ways to improve co–ordination. If it turns out that greater delineation is deemed necessary in the vocational field, it is likely that the community colleges would offer only instruction equivalent to grades 13 and 14 and equip students

for more advanced instruction on the road to the baccalaureate degree. High schools, on the other hand, would offer pre–vocational or exploratory courses and would in some cases provide the first two years of a four–year programme jointly with a community college.

Chancellor Mertes emphasized the relatively low cost of community college courses by contrast with those provided by corporations or other private institutions. The policy of low fees and the underwriting provided by state and federal programmes for training specific to particular industries gives the community colleges cost–effective advantages.

Question 2.3

With regard to the various forms of contract education, how is the curriculum designed or negotiated among the partners involved, and what is considered the best practice concerning the development and delivery of vocational education to the private sector of the economy?

Question 2.4

We believe that the value of the associate degree as perceived by senior higher education institutions as well as by employers of young graduates is not commensurate with the role community colleges are expected to play in preparing high school leavers for transfer to a full undergraduate programme or for working life. If this is true, what could or should be done so that this degree receives greater acceptance and recognition?

Perceptions of the value and utility of the associate degree vary widely. Transfer students tend to see no reason to obtain an associate degree, their objective being to obtain a Bachelor's degree. Other students, particularly the older ones and those in continuing education, see the degree as concrete evidence of entry or promotion into credentialled society. Employers value the skills which college students bring but may not connect them with this type of degree.

Nationally, a task force studying the associate degree has found that few students elect to complete the degree and that its status is low among them. Course work required for transfer is often in conflict with degree requirements, and the proliferation of degree titles has added confusion to a degree which in any case lacks attraction and value.

The first important step in reinforcing the substance of the degree has been taken by the Board of Governors: the weeding out of ineffective and weak courses in the degree sequence. The second step, the nearly complete adoption of a general education transfer core curriculum, is fundamental to enhancing the degree.

Ultimately it may be necessary to re–evaluate the degree and in so doing distinguish as many as three degrees: *i*) an Associate of Arts transfer degree; *ii*) an Associate in Science for transfer students moving into majors with extensive lower–division prerequisite courses; and *iii*) possibly an associate degree for those in non–transferable vocational education programmes.

Research Policy

Discussion then turned to research policy and the links of universities to the state, federal government and private industry. *Professor Tabatoni* remarked the absence of a conscious research policy in California.

Question 2.5

Is the absence of a well–defined state research policy seen as a major obstacle in maintaining the competitive position of California in the country as a whole and in the world?

The Canadian delegate *Mr. Shapiro* followed up this question with reference to the uneasy relationship between research and undergraduate teaching. Could it be, he asked, that increasingly the front line of research had to be found in graduate institutions?

A direct and detailed answer was given by *President Gardner* using the University of California as his prime example. "We receive about $200 million a year from the State of California for research, a small portion of which is indicated by the state for research on agriculture. We use that money to provide the basic infrastructure, i.e. provision for those personnel and facilities that enable us, as a university, successfully to compete at the national level for basic research funding from the agencies of the federal government that provide $800 million to the University of California through a peer review research process. These funds come principally from the National Science Foundation (NSF), the National Institutes of Health, the Department of Energy and so forth, so the state positions the University of California to compete for the dollars available at the national level. Therefore there is not in that process any clear formulation of research policy as such, but there is a policy to equip the University of California with the capacity to compete for research. The state's policy is to make us a competitor for the federal dollar for research.

"At the federal level, there is a clear articulation of research needs and interests. There is a decision made by Congress to appropriate so much money to the National Science Foundation, so much to the National Institutes of Health, and so forth, but, within those appropriations, the federal agencies have very considerable discretion to allocate the money for basic research to whichever institution is thought to be most capable of using it. Several years ago the federal government provided very significant resources for research facilities and research equipment. It does not today and the states are left with that responsibility, and therefore the State of California, which funds us generously with respect to equipment and space compared with most states in the country, puts California at an advantage compared with those states that are not funding the infrastructure. Now, within the State of California there will be occasionally an issue of such significance that the state will add to our budget funding for specific research, and in that sense there is a state policy — for example, research on AIDS. The State of California provides $30 million a year to the University of California earmarked for that purpose.

"But the university does not look only to government. It looks to industry as well for significant support for its research, some of which is basic and some of which is applied. Incidentally, we would not accept an arrangement with any industrial or commercial interest that we could not walk away from without damage to the institution. On that criterion we have a set of very extensive relationships with industry, not only within the United States but abroad.

"There is another feature of our research organisation deserving of attention and that is the collaboration in research among and between universities. For example, the California Institute of Technology and the University of California are as co–equal partners now constructing a ten–metre optical telescope in Hawaii. The arrangement is that Caltech raises the money to build it and the University of California raises the money to operate it. We formed a separate non–profit corporation, of which Caltech and the University of California are the sole owners, for the purpose of both constructing and operating the telescope. So we look to other universities for ways and means of accomplishing in research what neither one of us could, working alone, accomplish."

In the course of further questions from the country delegates it emerged that there is concern in California that the state's research standing is threatened because of the loss of important Federal research projects in recent years (SEMATECH, the Earthquake Research Center, etc.), declining

productivity, and increasing inability to respond effectively to growing competition from other states.

The federal government is the major influence in research because of massive funding of university–based research. While an explicit national research policy does not exist, implicitly policy decisions are charted through the funding by NSF and other federal departments. The growing attempts in Congress to reverse the historic reliance on merit in these funding decisions threatens Californian leadership.

The basic system of research funding utilised by the federal government rests heavily on peer review, and provides considerable flexibility to researchers and research institutions — an ingredient generally regarded as essential to an innovative research setting.

As the primary state–supported research agency, the University of California assists in establishing a state research agenda in several ways, but primarily through dialogue with the state based on extensive consultation within and outside the University. Certain programmes (MICRO, the Competitive Technology Programme, Biotechnology) involve representatives of state agencies to promote two–way communication. The California Policy Seminar exists precisely to link research resources to the needs of public policy–makers.

An important step in the state's movement towards a state research agenda is the Council on Science and Technology. This Council is a public service established by the leadership at Stanford, Caltech, the University of California (UC), the University of Southern California (USC) and the California State University (CSU) to identify long–run research needs for sustaining the state's economic development and competitiveness, to assist private sector/university relations and technology transfer, and to analyse public policy issues.

Question 2.6

In the context of current federal policies and state regulations, what are the main problems in developing basic research capacity in universities and colleges? In particular, is the co–ordination of research and graduate training between the University of California, the California State Universities and the independent sector adequate to respond to Californian research priorities?

Mr. Shapiro of Canada again followed up the question, enquiring about the ability of universities to maintain themselves in the vanguard of research. Is this possible with current salary scales, with current recruitment patterns, and the longer–term issue of faculty renewal?

Chancellor Reynolds pointed out that the State University would need 8 000 replacements in the next ten years or so. Salary rigidity is a problem in the CSU, and faculty members are being lost because of it. *President Gardner* explained how the universities' salary schedule is based on comparisons with eight other distinguished American universities, and he thought it was adequate for recruiting in the academic market. The problem is competition with the private sector. Faculty replacement remains the primary problem faced by the university. *President Winter* noted the comparable salary scales used by the research institutions in the Association of Independent California Colleges and Universities (AICCU) and declared them comparable to those of the University of California. On the other hand, the liberal arts colleges within the AICCU had generally lower salary scales but enjoyed considerable success in attracting teachers who wished to work in close relationship with undergraduates.

Basic research capacity includes scientists, faculty, and graduate students, in addition to facilities, instrumentation and research funding. Problems loom on the horizon in all these areas.

The academic infrastructure in which basic research takes place is obsolete and will require a major effort to restore. The cumulative need for improvement of the infrastructure is now placed in the $15–20 billion range (Erich Bloch, Director, NSF).

Another problem is the growing imbalance in the supply and demand of Ph.Ds in the natural sciences and engineering. As retirements increase during a period of rapid enrolment expansion, academic demand for new research scientists and engineers will spiral. Demand by business and industry will also increase. Over half the doctoral earners in chemistry and engineering choose non–academic careers. The American Council of Education notes that faculty shortages already loom in computer science, business, and mathematics, with engineering, foreign languages, and the physical sciences to follow.

A related concern is the small number of resident students, and the large number of those who are foreign, attending America's graduate schools for scientific and technical training. More than half of the engineering graduate students in the United States are foreign born — one–third in mathematics and physics. Seventy per cent of them remain in the country after graduating.

Federal regulations affect research capacity. For example, while America's research universities strongly support, and have helped develop, guidelines and regulations in such areas as biotechnology, toxics and use of animals in research, overly burdensome regulations have held up construction of new laboratories and research facilities, and are killing key projects in some instances.

State government affects basic research capacity to a lesser degree because of lower state funding levels. There is considerable tension between state policies to encourage applied research to be commercialised and spur economic development, and the fear that university researchers are incurring conflicts of interest.

There are areas of mutual interest and benefit in research and graduate training. For example, certain focused research programmes are administered by UC, but they include participation by other research institutions (examples include the AIDS research programme, and the smoking–related programme now in development). UC and Stanford have been selected jointly as a centre of excellence for SEMATECH, and will work together in a programme of advanced research, technology transfer, and education. Joint doctoral programmes between CSU and UC and independent institutions provide a mechanism for increased co–operation in graduate training. Programmes also exist to identify minorities at CSU who can become graduate students at research universities and later faculty members at colleges and universities.

President Gardner pointed out that there is movement of personnel among and between industry and the university. "By way of example, Professor Herbert Boyer at the University of California, San Francisco, and a colleague at Stanford unravelled the mysteries of the DNA several years ago. They were both professors at the time. They became so interested in the commercial aspects of this that they were invited to take a leave in order to develop their company Genotech. They were gone for four or five years and they wanted back on and we took them. So Professor Boyer is a full professor at the University of California, San Francisco, having taken about a five–year leave to get his company started. We encourage this kind of mobility and our personnel policies are written so as to accommodate it.

"Yet the question of research and teaching remains a sore point. We defend our arrangement as best we can although we freely acknowledge its weaknesses. We don't know any other way of doing it. The State of California would not pay for a research university if we only offered instruction to graduate students. Indeed, they would not pay, in my opinion, for a university that only offered the last two years in graduate instruction. The only way we manage is to admit students at the freshman level in large numbers, and redirect the money that is appropriated for them to the graduate programme. There is no way of managing at the moment other than the way in which I have

very honestly described it to you. On the other hand, that is not an excuse for ignoring our students enrolled at the first two years, and we are making, as we do periodically, a determined effort to improve the quality of the education our freshmen and sophomore students receive, but I think it is also fair to say that they receive less attention than our graduate students do. Nevertheless, the quality of the faculty that we can attract to the University of California arises from the quality of the graduate programme, not from the quality of our freshmen students, and the presence in the University of California of a very distinguished faculty, whether they teach freshmen or not, sets the intellectual tone for the university and permeates and infuses every aspect of its work. So for students who are quite independent, capable of taking initiative, able to live with a less directive environment, University of California is a good place to be. If the student is dependent, looking for a lot of help, it would be an uncomfortable place.

"The University of California manages three national laboratories for the federal government: Laurence Berkeley Laboratory, Laurence Livermore National Laboratory and Los Alamos National Laboratory.

"So we have arrangements with national laboratories, we have arrangements with other universities, we have arrangements with industry, we have support from the state and support from the federal government. It defies a simple description and it takes every part of this for the whole to work. One great advantage is that if the support from one sector declines through our own initiative, we can increase the support in other sectors so we are less wholly dependent on one source of funds to sustain the enterprise."

Question 2.7

It would be of interest to other countries to hear from the Californian delegation what they consider to be the main achievements and failures in the recent history of applied research and technology transfer in their state, and which of the joint university/industry schemes are viewed as particularly successful?

The Legislature's Joint Committee on Science and Technology has observed that in the 1980s California possessed the world's greatest concentration of high technology industry and some 22 per cent of the nation's scientists and engineers. Statistics also show that a third of the commercial biotechnology firms and a third of the microprocessor producers and suppliers are located in California.

Probably the principal achievements are the discoveries made and the applications developed in solid state physics and computer science which gave rise to Silicon Valley, making California the early leader in high technology. Major credit for these pioneering achievements goes to the California Institute of Technology, to Stanford and Berkeley, and to several other institutions in the state.

In the case of both computers and biomedical technology, the highly co–operative relationships among faculty researchers, university offices of patents and licensing, venture capitalists and industry executives were keys to the mutually beneficial technical and economic results.

In 1988 Stanford began an institutional research project designed to determine the extent to which the university has contributed to the regional and national economy through industrial innovation. More than 100 Stanford spin–offs have been identified so far, i.e. directly derived from a Stanford programme or research there. Of the 23 companies examined so far, in each case it has been determined that a campus–originated technology reached public use. Five of the companies pay royalties to Stanford, ten have consulting relationships, nine have hired graduates, and two have made sizeable donations to the University.

A long–standing example — the University of California agricultural experiment stations and co–operative extension — provides a classic case of research being directly translated into applications to real problems and then disseminated to users. *President Gardner* offered the illustration of the square tomato. Agriculture, the largest industry in California, had become developed in large part on the basis of ideas and services from UC and CSU. But high labour costs were leading to the transfer of tomato growing to Mexico. Could the universities develop mechanical picking? The university did indeed develop the appropriate machinery, but it could only handle square tomatoes. The problem was then solved by the universities' biotechnicians who bred the required shape.

Nevertheless, despite clear particular successes, the growing complexity and rapidity of change of technological advancement in recent years has pointed out the need for a more comprehensive statewide infrastructure embracing government, university and industry. This more structured approach is seen as narrowing the gap between basic laboratory research and application and development.

The recent history of technology transfer and university–industry schemes in California is not one of unending success. There have been disappointments and failures, most notably the loss to other states of the MCC project, of SEMATECH and the National Center for Earthquake Engineering Research and the failure of California to even qualify as a finalist in the process of locating the supercolliding superconductor. In many of these instances Californian failure pointed to a serious lack of co–ordination between state government, industry and the academic community. Greater cohesion will be necessary among key groups in the future because the state is facing serious competition from other states which have begun to argue successfully that California already has too large a share of the nation's research and development resources.

Adult and Continuing Education

Turning finally to adult and continuing education where demographic trends and the rapid pace of socio–economic changes are leading to a growing need and demand:

Question 2.8

Is there a clear division of responsibilities among the segments in this area? Is the original idea of the Master Plan to set up a special segment to co–ordinate all these programmes (a proposal which is frequently discussed but has never been adopted by the Legislature) receiving strong support? What other alternatives are being favoured?

Adult basic education is the responsibility of high school and unified school districts, except in those instances where by mutual agreement the responsibility is assigned to a community college.

Each year 7 per cent of Californians enrol in adult or non–credit courses. The largest number of these enrol in English as a second language.

Fiscal responsibility for adult education was transferred to the state following the passage of Proposition 13 in 1978. Only those districts with programmes in existence in 1978 are authorised to offer courses, even if local growth and circumstances warrant such activity.

The Commission for the Review of the Master Plan noted that adult literacy training and basic skills education are expected to join the teaching of English as a second language, and remediation, as the most difficult challenges facing Californian education in the next 15 years. They concluded

that the responsibility for non–credit adult education should continue to be shared between the public schools and the community colleges, but believed that changes were necessary to ensure that the needs of local communities are effectively and efficiently met.

In that same report the Commission noted a lack of agreement as to which courses should be fee–supported and which self–supporting. In addition, there was confusion as to which courses should be offered in high schools and colleges. They concluded that the California Postsecondary Education Commission (CPEC) should study the funding of these programmes and that local agreements on delineation of functions were needed at all levels.

Little co–ordination exists among continuing education programmes at the four–year institutions, but inasmuch as these programmes are self–supporting there is not generally thought to be a problem. Essentially, courses are not offered unless they can recoup their costs. A minimal number of units may be transferred from the UC and CSU extension into regular university degree programmes.

Private institutions, both independent non–profit and proprietary, have responded to the need for adult and continuing education. Consequently, California has thousands of programmes of varying complexity and quality. State co–ordination, oversight, and enforcement of standards of these institutions hardly exist. Legislation is currently proceeding to tighten control and to upgrade standards.

Professor Halsey reminded the meeting that policies for adult and continuing education were a vibrant issue on both sides of the Atlantic. They had been mentioned earlier under the rubric of general and vocational education. But he was disappointed in that part of the discussion because there was an alternative language for speaking about this set of issues which had been put into the Examiners' Report — the trifold distinction between education as a consumption good, as a production good, and as a positional good.

"If we share an ideal, I think it would be that in the end we want education as we truly understand it, to be a consumption good; something that is enjoyed for itself, because it directly raises the quality of the lives of its participants. But in fact, we have to talk about it all the time as a production good — that is to say, aimed at raising the quality of the labour force which will then produce a high GNP per capita, which then can be used for civilised purposes. It is always indirect in that way. We also, though we haven't spoken about it today, always have to notice that credentialism — the inflating of the educational terms of entry into one occupation after another — is sometimes a negative sum game and not a positive sum game. It is a function of expansion of education systems that we are all well aware of. On reasonable definitions there are about 15 countries in the world which demographically and economically qualify for being what is called in the modern jargon 'third age countries'.

"In these OECD countries there are enough people who will live long enough, and expect to have a substantial period of their lives when they will no longer have to work in the ordinary traditional sense, but who will be active and will be living in a country which in turn has the resources to keep them at a high level of health and social security. Thus there is a new educational class that is just beginning to emerge from over the horizon, and fifteen countries are already in the position I have just described. I could quantify it, but we don't have time. Now, if that is the case, then surely the people in that new education class will be those who will, above all, be looking for education as a consumption good. For them positionality and production are relatively secondary, or indeed even negative. Their emerging expectations ought to be in our sights; it ought to be part of the future programme of the Californians and all the other OECD countries. If their educational policies fail for lack of funding, then they will have to defer what in a serious sense is the ultimate good in any educational plan."

Chapter 3

RESOURCE CONSTRAINTS

Professor Tabatoni pointed out on behalf of the examiners that they had seen how pervasive are the financial issues in the context of the development of post–secondary education: they will not diminish in the coming fifteen years. Urgent needs seem to be accumulating, catching up with deficiencies and lags in the adaptation of the education system. Increased competition for public and private funds within education, and between education and other social needs, is also a major issue.

Developments include expectation of a larger participation of ethnic groups, linked with improved success in secondary education and better co–ordinated efforts to reach and support ethnic students; massive faculty renewal and retraining of teachers with a larger proportion of ethnic minorities and of faculty with science and technology background; the increasing role of continuing education and retraining for adults in a fast–moving technical society; more funds for student financial aid; academic contributions to research and development within policies for a better balance between fundamental and applied research; rapid expansion of the use of new information technology in teaching; more intensive, pluricultural and international curricula, etc.

Securing more resources to meet those needs is not the only solution: a better use of existing resources is also on the agenda, although the examiners did not get a clear impression of the most urgent and workable form of it.

Question 3.1

The basic issue is how to obtain enough resources through present budgetary practices. The recent voting of Proposition 98 seems to indicate public anxiety about the need for improvement in education to the extent of readiness to accept new specific taxes, e.g. on tobacco. But the budget guarantee which has just been granted exclusively to the primary and secondary schools and the community colleges could be at the expense of the long–term needs of public universities.

An introductory historical answer was offered first by Kenneth O'Brien, Director of CPEC.

California's budget process until 1978 was considered one of the best in the nation. For example, results arising out of the budgetary reforms of the 1930s included single budget bill, line–item veto, appropriations bills being held until budget is through, all items of appropriation and sources of revenue becoming a single bill, and balanced budget.

Since 1978, however, starting with Proposition 13 which resulted from concern by citizens over excessive property taxes, and followed by legislative inactivity in coming to grips with the situation, California has had a series of individual initiatives that limit ability to maintain a balanced decision process. The Gann appropriations limit, passed by the electorate as Proposition 4 in

1979, further limited the state's ability to fund the necessary programmes in education and in other areas.

The effect of the revenue and expenditure imbalance resulted in severe underfunding of K–14 (the primary and secondary schools and community colleges). A recent decision by the state Legislature, Proposition 98, makes an already bad situation worse, in that it further sequesters special interests in the budget and leaves post–secondary education and other social services vulnerable to cuts.

In summary, the best estimates of the effects of Gann and of Proposition 98 on the funding of public higher education are poor. The needs for revenue are not likely to be met, and the expenditure limitations make growth impossible.

Question 3.2

What types of long–term strategy are the public segments considering, to position themselves in this competitive environment, and what are the major issues in this orientation?

The view of the Department of Education is that, as the 1989–90 state budget was structured, the funding requirements of Proposition 98 came to be characterised as precluding appropriate adjustments of other key areas of public services, such as health and welfare programmes and post–secondary education. Such a characterisation was not accurate.

In 1986–87, due to changes in the federal and state tax structures, California ended the fiscal year with $1.1 billion in tax proceeds that, under a provision of the State Constitution, could only be used for a limited category of expenditure. Among them, Proposition 98 allowed unrestricted allocation to public schools and community colleges, *only if* accomplished before the end of the fiscal year. A legislative and gubernatorial stand–off resulted in failure to boost school and community college funding at all, and the funds had to be returned to taxpayers.

The following year (1987–88), a countervailing revenue fluctuation severely limited school and community college funding increases from the state.

In light of these events, the K–12 education community endorsed two initiatives deliberately intended to address the state's fiscal problems *without raising taxes*: Proposition 71 (June 1988) which was rejected by voters, and Proposition 98 (November 1988) which was passed.

Proposition 71 would have lifted the lid on the state's appropriations limit (or Gann Limit) to permit responsible adjustment for real economic growth. It would have allowed expenditure of the funding expected to be produced by the state's existing tax structure.

Proposition 98 guaranteed an ongoing base of funding for K–12 and community colleges, adjusted each year for enrolment changes and inflation. It also captured so–called "excess" revenues that would nominally have been returned to taxpayers, and directed them instead to programmatic improvements.

Had Proposition 71 been enacted, the "excess" revenue provision of Proposition 98 would have yielded only modest amounts, if any, for the foreseeable future. However, in view of the rejection of Proposition 71, there arose the strong prospect of major funding boosts for K–12 and community colleges.

There are efforts under way in the Legislature in the form of SCA 1 (sponsored by Senator John Garamendi) which, if successful, will give Californian voters a means of distributing among all segments of the budget the excess revenues that Proposition 98 would accrue exclusively for schools and community colleges.

The K–12 education community is again sponsoring these efforts, even though the result may not be in its direct self–interest. The Department of Education is interested in ensuring that, when

all is done, schools and community colleges have sufficient funding to maintain real growth and to enhance programmatic improvements.

Planning for the four–year public universities' resource needs and projected funding for the year 2005–06 had begun before the passage of Proposition 98. While the University of California and California State University methods and timetables differ somewhat, their planning assumptions and projections at present reflect the constraints already imposed by the Gann spending limit and Proposition 13.

The anticipated resource needs for the year 2005–06 are concentrated on the core activities which are traditionally funded by the state and exclude federal research contracts and grants, student fee–funded activities, and activities that are self–supporting. These projected needs are in four categories: operating costs not related to growth; programme improvements; growth for existing campuses; and growth for additional campuses.

Operating costs include those which are unavoidable and must be funded: adjustments to the base budget for inflation, salary and merit increases, and funds for instructional equipment replacement and for operation and maintenance of space for research or public service programmes. All of these costs are not related to growth.

Programme improvements are new or expanded activities, for which it is felt there is a definite need for funding, such as: affirmative action; intersegmental co–operation with K–12 schools, the community colleges and California State University; and research initiatives on biotechnology, toxics, robotics and AIDS.

Growth for existing campuses must include resources for the sustenance of quality in current academic programmes and activities on existing campuses. As each campus enrols more students, this in turn requires more faculty, equipment, space, and support staff. Moreover, both segments continue to cope with at least a ten–year backlog in meeting capital needs above and beyond the costs related to renewed enrolment growth.

Growth for additional campuses: In the long–range planning for the University of California, it is foreseen that existing campuses will not be able to accommodate 2 600 additional students per year. Too rapid a rate of growth disrupts a campus' ability to offer quality academic programmes. Consequently, the projected needs include planning for additional campuses to accommodate increased enrolments.

To what extent can these significant needs be met under current constraints? *President Gardner* suggested short–term and long–term answers to that question. On the more immediate needs for the University of California's 1989–90 operating and capital budgets, the single objective was to maintain the University's resource base adjusted to accommodate inflation, fixed costs, enrolment growth, and salaries. The 1989–90 budget recommendations seek no improvements, despite the urgent need for augmentations in such areas as instructional improvements, building maintenance, libraries, affirmative action, and new research initiatives. However, every effort will be made to determine whether existing funds can be reallocated in order to keep momentum going in a few critical areas such as affirmative action. This is the only way that the University of California has been able to meet the short–term constraints imposed by the Gann Limit and Propositions 13 and 98.

But over the longer term, President Gardner argued that the universities and colleges must be more aggressive in altering state budget practices if they are to support state policy. The authors of the 1960 Master Plan held the conviction that "whatever is required in the future to offer qualified students an efficient program of higher education will be provided by the citizens of the state".

The 1988 Commission for Review of the Master Plan further stated that "Californians will be called upon to choose between repealing or modifying Article XIIIB (i.e. the Gann Limit) or

abandoning their traditional commitment to educational opportunity. We believe that they should not abandon that commitment."

All educational leaders in California share that sentiment. The stakes for each segment are very high. The University of California, for instance, takes very seriously its historic commitment to accept all eligible students who want to attend. It would be an onerous choice for the University to decide between allowing the base budget to erode or limiting enrolments. President Gardner's intention is that "we will not sacrifice quality; we are also strongly opposed to limiting access". As a consequence, the University's Board of Regents recently adopted a resolution to "endorse, in principle, modifications in constitutional limitations on overall state spending and on the allocation of state funds that will secure for the Governor and the Legislature the capacity to fund the University of California to meet its long–range planning goals, to maintain the distinction of its programmes, and to continue providing access to qualified students".

Nor is the University alone in its extreme concern over the adverse effects of the Gann Limit and Proposition 98. The California State University Board of Trustees have declared support for the work of Chancellor Mertes; the AICCU has participated fully in state discussions; CPEC has suggested its own role in this process. The Governor has announced his intention to work with the legislative leadership on a comprehensive review of the state budget process. At least four legislative initiatives are under way; these efforts involve a broad coalition of educators, business people, and residents. It is clear that whatever proposal emerges on the modifications to the spending limitations and fund allocations will also accommodate K–14's need for adequate funding — the issue that initially prompted Proposition 98.

It is a measure of the faith held by the segments and CPEC that long–term planning assumes that some change in the state's appropriation limit will be forthcoming to fulfill the commitment of open access for all qualified and motivated students. This reply (to Question 3.1) addresses *state support* of higher education. Given the state policy and commitment to access to post–secondary education, state support must be the cornerstone of this operation.

Nevertheless, as Question 3.2 implies, current fiscal constraints have driven public segments to pursue aggressively the kinds of funding support that are always important to private institutions. Student fee–funded and self–supporting activities provide significant additional support, even though state policy delineates limitations, especially on the load that should be carried by students. All three of the public segments of higher education have historically been committed to tuition–free education, believing that the state appropriately bears full financial responsibility for the costs of instruction, research, and public service. The state, as a matter of policy, has endorsed moderate fee increases.

Extra–mural support, especially from federal sources, for research has always been important to the University of California, and the campuses have become increasingly aggressive in pursuing this source of funding. The most important feature that the OECD examiners identified when visiting California was the extent to which individual campuses now sought alumni and other private support for their operations. However, it would be wrong to give the impression that the burden for support of public higher education was shifting to the private sectors. This is certainly not the case.

Question 3.3

Are there reasons to believe, as is sometimes mentioned in the public sector, that a general policy of reducing taxes as compared to increasing public spending, might in the long term be more favourable to the development of the private sector of education?

An answer to this question was offered *on behalf of the AICCU*. Independent colleges and universities depend on contributions which are affected by the level of disposable income in society. In addition, they are aided by state support from grant and loan programmes which are funded from tax resources.

The answer to the first part of the question is that private institutions do benefit from tax cuts — but not those that are achieved through *rate reductions*. When tax cuts are accomplished through rate reductions (especially income tax rates), there is a trade–off between the increase in disposable income and the increase in the cost of giving which adversely affects giving. There are two effects when rates are reduced — an income effect and a substitution effect. The first refers to the fact that when any tax declines, the individual or corporation has more disposable income for all purposes, including giving. The second refers to the fact that the level of subsidy (tax write–off) offered by a charitable deduction declines when rates decline. For example, if one's effective tax rate is 70 per cent, the net cost of giving $1 to an independent college is 30 cents. If rates decline to 50 per cent, the net cost of giving becomes 50 cents. Models of economic behaviour suggest that the substitution effects (which are negative in relation to giving) outweigh the positive effects of income changes. This effect is especially pronounced for higher income givers, where gifts of appreciated property and similar discretionary gifts are more likely. Thus, when income tax rates decline, charitable donations are adversely affected.

The form of tax reduction which shows the most beneficial effect in terms of charitable giving is precisely the form which has so adversely affected the state's ability to spend. Beginning in the mid–1960s, the state enacted a series of restrictions on the scope of the revenue system which limit the ways in which taxes can be collected. For example, the Legislature enacted a series of exemptions from property tax for residential, single–family dwellings, beginning with SB 90.

In 1978, the voters enacted, through the initiative process, a constitutional amendment, Proposition 13, which limits property tax rates to 1 per cent of the assessed valuation, and with no more than a 2 per cent per year growth. In subsequent years the initiative process was used to enact other propositions, including: Proposition 4 (the Gann Initiative, 1979) limiting total appropriable revenues to a factor based on current spending in 1979 and expanded annually by increases in population and the consumer price index; Proposition 7 (1982) indexing personal income taxes (rates and exemptions) to changes in the consumer price index; and limitations adopted through ballot propositions on the level of collectable inheritance taxes. Each of these actions has tended to limit the amount of revenue which can be collected and expended. The effect of these changes has been to increase the individual's level of disposable income without increasing the cost of giving, thus raising the likelihood of larger charitable donations.

In addition to these steps and in response to the Federal Tax Reform Act of 1986, the California Legislature enacted a change in the personal income tax which lowered tax rates and broadened the base of the state income tax.

The third condition in a tax cut relates to initiatives which limit either tax yield or appropriations. The ultimate effect of these restrictions is to limit the available funding for programmes such as state–supported student assistance programmes. Simultaneously, however, the limitations will cause a narrowing of the gap between tuition offered at independent and public institutions, which will result in independent colleges becoming more price competitive with middle income students. As with the trade–off on tax rate reductions, the balance of effects caused by revenue limitations will ultimately be negative. First, funding for student financial aid has proven to be a remarkably discretionary expenditure. In years where revenues are abundant, support increases — although at not quite the rate for support of comparable higher education expenditures. In lean years, funding for aid is often the first item cut. Experience since the passage of Proposition 13 suggests, on the other hand, that support in the Legislature for maintaining payment of student fees at public

institutions, even when that decision is adverse to the long–term health of the institution, is remarkably durable. Thus, the net effect of tax and appropriations limitations, which result in tax reductions, has been negative to the interests of independent colleges and universities.

Question 3.4

On students' financial aid and students' fees we note that the two are, de facto, *strongly related. Fees in the public sector are subject to careful public regulation. They are fixed by the boards of institutions, and financial aid is a government decision. An issue is whether such public decisions are being taken within a prospective approach to the global finance of the different institutions, public as well as private.*

In this respect the examiners have heard worries about fees which represent, in 1988–89, about 6 per cent of the total resources of the public segments as compared with about 15 per cent on a national level. Student public aid amounts to 3 per cent. Appropriations voted for CAL grants A, B and C in 1988–89 concerned the same 70 000 number of students as in 1987–88 (including a 5 per cent "restoration package"). The examiners heard also that only half of the applicants could get through the financial screening and the administrative complexities of the procedure, which incidentally was not generally available to adults employed half–time.

Independent institutions, where fees contribute from 30 to 40 per cent of resources and for which public sector students' aid is the only public support, complain that they have to use their own funds to support their less privileged students. This, in their view, limits the actual freedom of choice of students and compels them to charge higher tuition fees, which increases the number of students' applications to public institutions: a sort of vicious circle.

Furthermore, the increasing proportion of "loans" compared to "grants" appears to many educators as a weakness, especially as it applies to less privileged students or to those not engaged in well–recognised professional education.

What are the main reasons for a perceived lag in the extension of financial aid to students? Is the complexity of the political and administrative decision process a significant factor? Is the growing proportion of "guaranteed loans" seen as a compensation to the limitation of grants, or rather as part of a basic policy challenging each recipient's responsibilities and his own planning for education? Will the expected larger proportion of ethnic poor students in post–secondary education lead to reconsidering the importance of the "loan component" in aid policy?

Question 3.5

Is the recent extension of "institutional aid", as compared with direct aid to students, a new policy aimed at giving back to the universities a better monitoring of their own students' financial support?

The community colleges and the California State University are much more dependent on public funds than is the University of California. Nevertheless, there is competition between the public and private sectors for private money. The examiners noticed that the public segments were expected — in the 1988–89 budget proposals — to collect about one–quarter of their resources from private sources and services. The corresponding figure nationally is a little higher (26 per cent). It is expected that such a limitation to the growth of public finance will intensify competition with the private sector which by its traditions and its social connections seems better organised to raise private funds. One could expect that the public sector would have to engage in expensive "promotion costs" in order to meet a fiercer competition.

Some independent institutions suggest that more public funding for research, especially within an overall state research financial policy benefiting public as well as private colleges, might help.

Question 3.6

Is there any possible new public policy as to tax incentives for gifts, or an extension of state research support, or other ways which would benefit the two sectors of education? Is any form of "pre–competitive" co–operative action between the two sectors conceivable, eventually with some public support?

With respect to community colleges: Proposition 98 has dealt with recurrent lags of funding and the persistence of great uncertainty in the finance of the community colleges. But other elements of national financial policy for these establishments have frequently been mentioned. A number of our informants thought that the centralisation of finance, due to Proposition 13, would reduce the capacity of colleges to adapt quickly to local needs and would cause undue standardization and delay. Other schemes, as we understand it, are being studied to submit the colleges to criteria for funding closer to the ones used in universities, which would abandon the "average daily attendance" and move towards a basis of "full–time equivalent student" and differential budgeting. At the same time, Proposition 98, designed in terms of a K–14 conception, reinforces budgetary links with secondary education budgeting.

Concluding Discussion

An excellent set of questions from the country delegates took the assembly towards the issues raised in the next chapter — planning in relation to public and private finance. *Mr. O'Brien* responded by pointing to the emerging frustration as a result of population growth and of the resource constraints on public expenditure in higher education. It was not, he said, a matter of decline in productivity or in the resources of the state. It was a political development imposed by the electorate as an order to spend resources elsewhere. Planning was in consequence difficult. It was clear that over the next 15 to 20 years a tremendous expansion of resources would be necessary to accommodate new students on new campuses. Much imagination would be needed if expansion was to be accommodated.

Student enrolment could be anticipated to grow at about 2 per cent per year if the resources were forthcoming. *Chancellor Reynolds* illustrated: in the state university system there are currently 355 000 students, and these numbers would grow by 50 per cent by the year 2005. Plans were being laid to add 180 000 students, and a new campus costing $47 million for the initial buildings had been approved by the Legislature. Chancellor Reynolds and *President Gardner* asserted that the state had the money. Economic growth is sufficient and there is popular demand to educate the young. Yet the bizarre situation was that budgets had to be cut while future growth was nevertheless assumed. If the finances were not forthcoming, higher education authorities would have no alternative but to cut the number of students.

President Gardner reiterated that California's population was expected to grow from its current 28 million to between 34 and 35 million by the year 2000. It was imperative that state policy in California had to be changed. The implication was that the University of California, for example, would not be able to maintain its mission to take in 12.5 per cent of the high school graduates.

President Gardner also referred to the historical experience of the state under Governors Reagan and Brown, both of whom for their own reasons had been unsympathetic to the funding of higher education. There was therefore ample experience of budget cutting. But over the last six years under the Governorship of Governor Dukemeijan, and with the support of the state Legislature, the losses of the 1970s and early 1980s had been fully recovered. Under the new circumstances the leaders of higher education in California had resolved to do their utmost to keep up their standards. President Gardner himself was determined to do so even if it meant limiting enrolment. In short, if the constitutional provisions for resources were not improved, growth in higher education would be arrested.

Professor Halsey then observed that what the Californian delegation was saying in response to questions from Europe was that their expansion plans depended on finance, that they had been obstructed in the past and could face similar obstacles in the future. Moreover, their planning appraisals suggested that the cost of maintaining the same standards and scope as had already been achieved would be greater in the future than in the past. But, still more interesting, it was clear that the leaders of higher education in California were thinking in terms of political rather than private solutions to the problem of gaining increased resources. There had been no suggestion that the solution could be found through the private sector, and this was an important message for other OECD countries, particularly in Europe, where private sector solutions are so actively canvassed. Many Europeans had assumed that California offered an example of successful private steps to guarantee future income. But the emphasis, in the event, was clearly on the state rather than the private purse. The Master Plan in principle guarantees access to some form of higher education to all California's high school graduates. This was, of course, not to dispute that the Californian strategy was a balance of the public and the private. But it does underline once more how important is the political will to make state resources available if standards are to be kept up and extended to offer universal opportunity.

Under these circumstances the efficiency of planning must be crucial.

Chapter 4

PLANNING AND LINKS

It emerged from the Background Report and the Examiners' Report that, within the American context, the State of California, through its Master Plan, plays a strong part in shaping higher educational policy. Nevertheless, there is no state authority for higher education but instead an elaborate system of shared public and private power. The system as it operates incorporates important elements of voluntary co–operation between the segments, for example in the Intersegmental Coordinating Council (ICC) or Round Table. The examiners therefore invited the participants to be concerned with the advantages and disadvantages of this particular form of Californian governance. The underlying issue here is the validity of the view taken in their Chapter 9, viz. that the successful pursuit of the Californian ambition for higher education will necessitate stronger political efforts in planning, co–ordination, evaluation and control.

Delegates from the various countries expanded this theme. Europe has a lot to learn from America, *the Greek delegate* suggested, "whether we like it or not". He was, however, aware of variation in practice between American states, and wondered how far the Californians ought to borrow from other state practices. *The German delegate* agreed that California seemed to set the pace in the United States but wondered if Californians were cognisant of developments in other states. *The Swiss delegate* emphasized that the major issue was a strategy for combining excellence with equity. But there were problems, for example, with the development of the skills of the faculty. *Kenneth O'Brien* acknowledged the questions, spoke about cooperation between states, and *President Gardner* cited the example of North Carolina as a model of university–industry relations. The underlying concern was to keep California fully competitive with the other 49 states.

Question 4.1

Is the absence of a state education authority perceived as a vacuum of power allowing too strong an influence by other administrations on decisions such as finance, or an excessive politicisation of decision–making? Or is the plurality of sources of control seen as facilitating an appropriate balance of power, leading to wider political support and public consensus?

The absence of a state education authority is not perceived by participants in Californian political processes as a "vacuum of power". The plurality of players is seen as an alternative disposition of power and decision–making that encourages innovation, risk–taking and experimentation. Moreover, public institutions are accountable to the public, and the key means of accountability is through the budget process.

On governance, the Californian example might be taken as an excellent model to consider — a model that relies on carefully developed consultative processes, implicit agreements among the

players, and very different kinds of structures to accomplish what, in most OECD countries, is achieved through central planning and top–down decision–making.

A "split executive" structure makes it possible for key positions to be filled through election by potentially competitive leaders from different political parties and with different agendas:

i) independence of the Governor and lieutenant Governor from each other;
ii) the executive and legislative branches, too, being dominated by different political parties.

The initiative process provides an additional point of access to law–making for the people of the state.

Characteristics of the decentralised decision–making process for California's higher education include three overlapping phases:

i) the deliberations of the Department of Finance that lead to publication of the Governor's budget;
ii) the analysis of that budget by the legislative Analyst's Office, resulting in recommendations to legislative budget committees;
iii) the review of the Governor's budget by the Legislature, often leading to amendments that the Governor may ultimately delete or retain.

In each of these phases, the three public post–secondary segments negotiate independently with the state–level actors: with the Department of Finance and the Governor; with the legislative analyst; and with staff and legislators on the two legislative budget committees. Segmental staff also negotiate informally throughout the three phases with staff of the offices involved to help shape the documents and recommendations that emerge.

The segments have significant control over their budgets. While the Governor and the Legislature review and approve the total segmental budget, the changes are generally at the margin: base budgets remain virtually intact from year to year, and the negotiations affect only the increases requested annually for programme enhancements. Second, the Governor has substantial power, because it is he who submits the budget and thus establishes the parameters of the discussion in the Legislature. Third, the Legislature uses budget review as an opportunity to open discussion on issues of interest.

There are certain underlying assumptions shared by all of the segments, in terms of avoiding each other's territory. This, of course, is facilitated by the structure put in place under the Master Plan, so that much of the competition for resources has been muted by the distinctive missions and clientele assigned to each segment. They communicate informally with the other segments about the course being taken in budget negotiations with the Department of Finance and the legislative analyst. The segments even collaborate in presenting to the state an "intersegmental budget" of programme enhancement proposals. They co–operate in other arenas — such as the Round Table and ICC — over such critical issues as educational equity and the movement of students.

Because of their different constitutions and missions, the segments, perforce, follow differing strategies. The University of California enjoys a constitutional autonomy. The historical antecedents of the community colleges as a loose federation of locally–based institutions have meant that the Chancellor's office must work with different expectations from its constituents, many of whom have strong and independent ties to the political system.

A flexible and dynamic process does not take place in a vacuum of policy. The Governor (through successive budget decisions), the Legislature (through the budget review process, as well as the passage of resolutions and statements of intent), and the segments (by building their budgets in an interactive process with campuses and then with Sacramento), establish a policy context that builds on the fundamental policy for post–secondary education delineated by the Master Plan.

Question 4.2

Does the Master Plan give sufficient autonomy to the different segments and their constituent institutions? Does the state governing structure faithfully reflect Master Plan priorities, and does the planning mechanism have sufficient strength to implement these priorities in the face of particular segmental interests?

The University of California and the California State University have strong governing structures that permit effective management at the segmental and campus levels. The UC board is constitutionally created, while the CSU board is statutorily established. In practice both boards delegate substantial authority to their chief executive officers and academic senates, and much of that authority is re–delegated to the campuses.

Governance within the community college system, the relative degree of power which should be assigned to the local and statewide boards, and the relationship of the college governing structure to legislative power was a central focus of the lengthy review of the Master Plan. The shifting of the bulk of funding for colleges to the state only made this question more pressing.

As has been discussed elsewhere, the basic roles of the Board of Governors and the district governing boards will be worked out within a framework of delineation of function embodied in the community college reform legislation, AB1725. The relationship between the system governing structure and the legislative powers is another matter. As a study by the Commission reviewing the Master Plan found: "To an extent almost unknown in the four–year segments, the Governor, the Legislature and particular legislators act not only as policy–makers but as active participants in the governance, organisation, and management of the community colleges."

With respect to intersegmental co–operation, the existing structure stresses voluntary co–ordination at the highest executive level through the medium of the California Education Round Table, composed of the chief executives of the segments and of CPEC. This new structure has not been in place sufficiently long to evaluate its effectiveness in introducing Master Plan priorities and concerns into the system. Moreover, the planning role of CPEC is a developing one which again cannot be assessed with any finality at this stage. Nonetheless, the degree of consultation and the general acceptance of the state–level planning process put forward by the CPEC staff augurs well for early developments.

Question 4.3

Is the constitution of the California Postsecondary Education Commission adequate to its functions? Does CPEC carry out its oversight functions effectively and at the same time promote flexibility and innovation in the system?

CPEC's own view is that it is properly organised and empowered to carry out its function. California has throughout its educational history opted for decentralised governance and control of the higher education system. In line with this predilection, CPEC's function is primarily co–ordinative rather than controlling. This is not to say that the Commission lacks authority, however. State law requires the involvement of CPEC in various processes, such as the development of new programmes or campuses, so that at key junctures CPEC can render advice. While in no instance does the Commission have the final word, in all cases the advice of the Commission carries substantial weight.

Ultimately, the influence and hence power of the Commission depends on the quality of its advice. While the work performed by CPEC has not always been of uniformly high quality, it has earned great respect for the distinction and reliability of its work. It has, when necessary, assumed

unpopular stands, such as support of the tuition fee at community colleges. In the end, this is the price of credibility.

While it might be argued that the need for economy and efficiency in Californian higher education calls for closer scrutiny of the public segments, the original design of CPEC has served higher education well. A measure of the acceptance of the approach can be gauged by remembering that the extensive Master Plan review just completed has once again upheld the basic co–ordinative structure.

CPEC is not without its problems. These range from practical, operational matters to basic and quite sensitive political issues. Staffing is an example of the former. CPEC's ability to attract high quality staff is at risk because of the state salary structure which compares unfavourably at senior levels with equivalent positions elsewhere. CPEC is challenged by the prolonged stalemate at the highest levels of Californian policy–making. Conflict between the executive and legislative branches has produced paralysis on most major policy matters. In such an atmosphere, advice is irrelevant.

Because the CPEC initiative has been dependent to some extent on a client group mainly made up of the segments, it has been silent when a more proactive posture might have led to positive resolution. Should CPEC be more assertive in putting issues on the policy agenda? The pricing structure is an example of an item that remains essentially unexamined because "no tuition" and "low fees" have long stood as articles of faith in the state. CPEC needs to address the question directly as to whether it can remain an important force over the next 15 years without more vigorously addressing such problems.

CONCLUSION: RAPPORTEUR'S RETROSPECT

Altogether it was an exhausting as well as lively day of debate. The exchanges across the east and west of the OECD map were the culmination of much visiting, discussion and writing, not all of which can be encapsulated in this record of confrontation. Both the Examiners' Report and the Background Report Summary are indispensable components of a more complete account. In this wider context, it may be useful to record some of the more memorable impressions made on the rapporteur by the discussion between the country delegates, the Californians and the examiners.

The underlying great question as to the transferability of Californian educational expansiveness was not and could not be wholly settled. Cultures and social organisations do, of course, travel in space and in time, but they are inevitably transformed in their new milieu. The emphasis all through the review meeting was on the possibility of transfer from west to east, from California to Europe, bearing in mind that Japan, which has travelled along its own peculiar trajectory towards mass higher education, is of special interest to California. But the Californians themselves were reminded by coming to Paris, and they reminded their OECD colleagues on the occasion, that their "four–year institutions" are still seen by themselves as essentially a legacy of medieval Europe. And the lights by which these universities live, reveal an "idea of the university", a set of notions about research and teaching, autonomy, responsibilities to science, scholarship and students, which are not essentially different from their counterparts in Europe or any other continent. The similarities, not the differences, are the abiding features of the academic enterprise.

What is thought of as an American and especially Californian innovation is the community college. We saw and we discussed its difficulties and especially its recent history of funding frailty due to the loosening of local responsibility and control. Yet no delegate can have departed from the meeting without a clear image of the uniqueness of the community college as a comprehensive institution belonging to higher education, as offering an open door to transfer courses that link secondary to higher education, and at the same time as a revolving door into every kind of vocational, specialist, adult and continuing education. If a distinctive Californian educational export is on offer to OECD, it is the community college.

But that is far from the whole story. If it were, there might well be interminable argument about its significance, with European traditionalists claiming alternative recognition of the merits and the capacity for expansion of secondary schools and what the British call "further education". Some critical conservatives might even still hold that, properly measured, the American, including the Californian, population is no better educated in letters and science or practical skill than are the people of Western Europe. Many more would be convinced that the structure is, taken as a whole, an adequate apparatus of access to an immense range of higher academic and professional learning. Above all, what almost no one can deny is the fact that Californian educational faith is the extraordinarily strong fuel that makes the apparatus work. It deserves specification if its transferability is to be correctly assessed.

In such a specification it is easiest and most important to recognise what Californian faith is not. It is not, for all its superficial sentiment, an empty liturgy of education piety. The Californian

post–secondary system is the most expansive in the world because its students, patrons and customers demand it. Belief in higher education has a quasi–religious character. It is the individual road to economic, psychological and social salvation. It is the source of skilled labour for employers, of expertise for government, of innovation for entrepreneurs, of cultivation for citizens. For educational administrators, professors, provosts and presidents it is a mission to deliver civilised prosperity. Thus, higher education in California is a secular church for practical visionaries. If they talk about it out of as well as in season, their rhetoric is not vacuous.

Equally, the Californian faith — liberal and entrepreneurial as it is — is not, in practice, antipathetic to the state. The underlying common sentiment certainly prefers individual to state responsibility. And it is true that the independent colleges and the private purse are readily commended by the majority of educational leaders, and that suspicion of Sacramento is easily excited. But nothing could be of greater distortion or of greater disservice to current policy debate in the European OECD countries or in Japan than the idea that California is the exemplar of a free market system of higher education. It is placed at the western end of the spectrum of political economies of education. But it is in fact a tendency and not at all a pure case of free market organisation.

The particular Californian genius is that of combining public with private enterprise, of devising constructive competition and co–operation between and among both public and private institutions. Each of the Californian segments of higher education is aware that it cannot fulfill its own distinctive mission without the existence of and support from the others. It is this complex of creativity, and emphatically not the simplistic translation of the message into insistence on education as privatised competitive industry, that can usefully be exported from California to the OECD world.

More positively, it became manifest during the discussion that, liberals though they be, the Californians are akin to the new liberals of the United Kingdom at the end of the 19th century rather than the pure marketeers of the earlier decades. They are not latter–day followers of Herbert Spencer. They see no viable future for higher education in California without the strong frame and steady financial support of the political state. Furthermore, they look beyond their own state to the federal government, expect generous support for both research and student maintenance, and see themselves as a kind of entrepreneurial instrument, providing the infrastructure for successful competition in the federal arena.

In a sense they are more aptly described as democrats than liberals. There is a keen appreciation of the dependence of education on popular support. If educational leadership does not meet the demands of popular aspiration, then political patronage will be withdrawn. This is no ideological creed: rather, is it a pragmatic realism about the conditions for successful development of education. Nor are individualistic sentiments hardened into doctrinaire ideology. On the contrary, Californian liberalism is hard–headed and also pragmatic. It is clearly recognised that tax laws can raise or reduce philanthropy. The Californian laws, rather than any miraculous social generosity, explain why so much private money flows into the independent colleges and the public institutions. Pragmatism manifests itself again and again in examples of collaboration across the boundaries of the formally public and formally private sector. The market drives, and competition rules, but the distinction between the private and the public is blurred and but lightly defended.

Finally, one cannot but be impressed by the ever–buoyant optimism of the Californian educational institutions. As *President Gardner* put it, "the gold rush began in 1849 and has never stopped". People come to California looking for a better life. By common consent they almost believe in the 19th century idea of progress, even though they would deny formal adherence to such historicism if challenged. They nonetheless behave as if a better future is always there to be found. They believe that education is the steadfast friend of social progress and they are wholeheartedly committed to this idea. Yet, when they contemplate the constraints which have been put on public

support through Proposition 13, Proposition 98 and the Gann ceiling, they draw what may seem to some Europeans a surprising conclusion. If it turned out that the Californians had to choose between an expansion involving the dropping of standards at the apex of their structure of public higher education in the University of California, they would with sadness but without hesitation sacrifice quantity to quality. The expansion programme presupposes a thriving economy and willingness to pay. If there is prosperity, the education system will expand it further. But if there is economic recession or failure to support education with dollars, then the ultimate value for California's educational leadership would be to preserve the high standards that have been so dearly won from their past efforts.

Part Three

SUMMARY OF THE BACKGROUND REPORT

"PREPARING FOR THE TWENTY–FIRST CENTURY"

by Clive P. Condren
California Postsecondary Education Commission

Chapter 1

CALIFORNIA AND THE NATION

Overview of California

Size and Population

California, the most populous and prosperous of America's 50 states, is larger than the United Kingdom, Italy, Japan or Norway, but smaller than France, Sweden or Spain. It has nearly three times Sweden's population and five times Norway's but less than two–thirds of Spain's, only slightly more than half the population of Italy, France or the United Kingdom, and only one–fifth the population of Japan.

California consists of only 4.4 per cent of the United States' total land mass but, as of 1980, it accounted for 10.4 per cent of its population and 13.4 per cent of its college and university students. It is the most urban state: 95 per cent of its residents live in its metropolitan regions.

It is growing far more from immigration than from new births. According to the sociologist Harold Hodgkinson, "California is now accepting almost one–third of the world's immigration"; and without immigration from other countries and in–migration from other states, "the California population would actually be decreasing. Fifteen per cent of California's population was born in another country while 55 per cent was born in another *state*".

California's population has been more ethnically diverse ever since the 1849 gold rush. As of 1980, 6 per cent of its population were Asians and Pacific Islanders — the second largest proportion of any state, behind Hawaii. Its 19 per cent of Hispanic residents was the third largest proportion of the 50 states, and its 8 per cent of Blacks was the 21st largest. By the year 2000, a majority of Californians will be ethnic minorities.

California's Economy

California's economy is the world's sixth largest. As of 1985, its $511 billion gross state product trailed only that of the rest of the United States ($8 404 billion), the Soviet Union ($2 063), Japan ($1 366), the Federal Republic of Germany ($668) and France ($527). That year, it surpassed the United Kingdom ($474) and continued ahead of Italy ($371), Canada ($347), and all other countries. According to London's *The Economist*, its economy may be in fourth place by the year 2000.

In 1984, it ranked fourth among the 50 states in per–capita income — at $12 443 per person — behind Alaska at $14 957, Connecticut at $14 044 and New Jersey at $13 179. It ranked seventh in median family income — at $31 967 — behind Alaska at $38 238, Connecticut at $37 703, and New Jersey, Maryland, Nevada, and Massachusetts, in that order.

Research and Education

California is an international centre for research and development, and it leads the nation in talent, resources and facilities devoted to these activities. In 1981, it had as many employed scientists and engineers — 574 000 — as the next two states combined, and it was home to over 13 per cent of the nation's industrial research laboratories and 11 per cent of the country's private research firms and individuals. This concentration of talent and physical plant draws massive research and development funding to the state: in 1985, the federal government spent over 20 per cent of its research and development funds in California, and spending by both Californian industries and universities exceeded 13 per cent of the national total.

As of 1980, California tied with Maryland for eighth place among the states in its percentage of college graduates among 25 year–olds and older — 19.8 per cent, compared to 23.0 per cent in first–place Colorado, 22.4 in Alaska, 21.1 in Connecticut, 20.3 in both Hawaii and Utah, and 20.0 in Massachusetts (American Council on Education, Division of Policy Analysis and Research, *1986–87 Fact Book on Higher Education*, compiled by Cecilia A. Ottinger. New York: Macmillan, 1987, pp. 12–13).

In terms of percentage of high school graduates, it ranked tenth of the states at 73.6 per cent, compared to 82.8 per cent in Alaska, 80.3 per cent in Utah, 78.1 in Colorado, 77.8 in Wyoming, 77.0 in Washington, 75.5 in Nevada, 75.4 in Montana, 74.7 in Oregon and 73.8 in Nebraska (*ibid.*) The national percentage was 73 per cent in 1986.

Yet its dropout rate is high: it ranks about 40th of all 50 states in its ability to retain young people up to high school graduation — among other reasons, because its public schools have very large class sizes: 24 students in elementary schools and 28 in high school, compared to a national average of about 18.

Government Expenditures

In terms of state and local government expenditures per capita, it has ranked 14th among the states. At $2 357 per capita in 1983–84, it lagged behind Alaska at $8 729, Wyoming at $3 904 and New York, Minnesota, Delaware, New Mexico, North Dakota, Hawaii, Nevada, Michigan, Oregon, Montana, and Wisconsin, in that order — although it remained above the national average of $2 131 and far ahead of the lowest state, Arkansas, at $1 478.

In terms of government expenditures for education per capita, it most recently ranked 24th among the states — at $759, behind Alaska at $2 309, Wyoming at $1 526, and Delaware, New Mexico, North Dakota, Montana, Wisconsin, Oregon, Minnesota, New York, Utah, Michigan, Iowa, Vermont, Colorado, Washington, Kansas, Nebraska, Maryland, Arizona, Texas, New Jersey, and Oklahoma, in that order, and slightly above the national average of $746 but far ahead of last–place Tennessee at $540.

Measured by government expenditures for higher education per capita, it ranks 16th — at $245, behind Alaska at $569, Wyoming at $390, Delaware, North Dakota, Wisconsin, Utah, Iowa, New Mexico, Arizona, Vermont, Hawaii, Oregon, Colorado, Kansas, and Minnesota, in that order, above the national average of $202, and far ahead of last–place Pennsylvania at $101.

Overview of Californian Post–Secondary Education

Education beyond the high school or "post–secondary education" in California is a multisegmental system of institutions co–ordinated by the California Postsecondary Education

Commission (CPEC) — a statutory planning and co–ordinating agency with primarily advisory powers. California's institutions of post–secondary education can be categorised in a variety of ways, but two major types are:

i) State–supported or "public" institutions;
ii) "Independent" and "private" institutions that receive no direct tax support from the state and rely heavily on tuition for operating costs.

State–supported colleges and universities include three major groups or "segments" of institutions:

— The California State University, consisting of 19 campuses;
— The University of California, with 9 campuses;
— The California Community Colleges, with 106 colleges;

plus two small institutions — the California Maritime Academy which prepares merchant marine officers, and the Hastings College of the Law which has a loose affiliation with the University of California.

Non–state–supported institutions include:

— Over 200 accredited colleges and universities;
— Some 150 non–accredited colleges and universities;
— Over 2 400 non–degree–granting vocational schools.

The Three State–Supported Segments

The *University of California*, established in 1868, is today one of the world's most distinguished institutions of higher education. It is California's primary state–supported academic agency for research; it offers four–year undergraduate (baccalaureate) programmes in a wide variety of fields; it has exclusive jurisdiction among public institutions over graduate instruction in dentistry, law, medicine and veterinary medicine. Among public institutions it has the sole authority to award the doctoral degree, except that it may and does award joint doctorates with the California State University.

The University of California, which enrolled 147 957 students in the fall of 1987, has eight general campuses and a health sciences campus in San Francisco. General campuses range in size from the Los Angeles campus (UCLA) with 34 378 students to Riverside with 5 227. All campuses have common undergraduate admission requirements and similar student fees, but each has its own distinctive character, atmosphere, and programme. The Davis campus has long had a major emphasis in agriculture and the only programme in veterinary medicine in California. The San Diego campus has a long association with oceanography through the Scripps Institution of Oceanography. The university operates five schools of medicine and three schools of law.

The university is governed by the Regents of the university, a 26–member board that appoints the president and, with the advice of the president, names the chancellors of the nine campuses. A university–wide Academic Senate, under authority delegated by the Regents, has wide discretion in establishing policy on admissions, degrees, curriculum, and other aspects of the academic process, such as peer review. Appointive regents are selected by the Governor for 12–year terms and confirmed by the Senate of the California Legislature. A student regent is selected by the Board, and two faculty members sit with the board as non–voting representatives.

The *California State University* had its origins in 1857 when California's first normal school opened in San Francisco. The normal schools — later teachers' colleges and then state colleges — were governed by the State Board of Education until 1960 when, under the Master Plan for Higher

Education, the Legislature organised them as the California State College System with their own board of trustees. The current name for the system was adopted in 1981.

The primary function of the State University is instruction of undergraduate and Master's degree students in the liberal arts and sciences, applied fields, and professions, including teaching. Its faculty are authorised to undertake research to the extent that it is consistent with this primary function. In addition, the State University offers joint doctoral programmes with the University of California and with independent universities. It admits its freshmen from the top third of Californian high school graduates.

The 19 campuses of the State University range in size from San Diego with 34 000 students to Bakersfield with around 4 000. Each campus has its own distinctive flavour: for example, two campuses — Pomona and San Luis Obispo — emphasize polytechnic and professional programmes. Four campuses — Hayward, Los Angeles, Pomona, and San Luis Obispo — offer year–round instruction, including a full summer quarter, while others offer limited summer programmes.

The Trustees of the University govern the system and appoint its chancellor and campus presidents. There are 24 trustees, sixteen of whom are appointed by the Governor for eight–year terms. The trustees, representing the alumni, students and faculty, serve two–year terms. A university–wide academic senate of faculty members recommends policy to the trustees through the Chancellor.

Since 1908, the *California Community Colleges* have evolved from extensions of high schools into junior colleges, emphasizing transfer and vocational courses; and, more recently, into comprehensive community centres offering broad educational opportunities to meet local needs. In the fall of 1987 they enrolled over a million students. These institutions range in size from Mt. San Antonio College with 26 239 students to Palo Verde College with 638. Programmes vary in scope and breadth.

California's 106 community colleges offer instruction through but not beyond the second year of college. They may grant vocational and technical certificates, and the Associate in arts and in science degrees. Through community service and adult education programmes they offer non–credit classes in literacy, health, civic, technical, and general education. For working students, evening courses are offered that lead to the same degrees and certificates available to day students. Many colleges offer apprenticeship programmes that provide training in a variety of fields. All community colleges offer programmes fulfilling the requirements for the first two years of work at a four–year college or university. Forty–five per cent of all community college courses are eligible for transfer to four–year institutions. The colleges also offer a wide range of community service courses.

The colleges operate under an "open access" admissions policy whereby anyone who possesses a high school diploma or equivalent, or who is over the age of 18 and can benefit from instruction, is eligible for admission.

The community colleges are the least centralised of the public segments. Seventy–one districts operate California's colleges. Of these, Los Angeles — by far the largest — operates nine colleges. The districts are governed by locally elected boards of trustees. Prior to 1967, statewide leadership for the colleges was provided by the State Board of Education, but in that year the Legislature and the Governor created the Board of Governors to provide policy direction for the colleges. The 15–member board selects the State Chancellor. The board is also charged by state law to "provide leadership and direction in the continuing development of community colleges" while "maintaining and continuing to the maximum degree possible, local autonomy and control in the administration of the community colleges." The Governor appoints the members for four–year terms; a student member serves for one year.

The Independent and Private Sectors

Accredited independent institutions: Two hundred and nine of California's non–state–supported institutions are either accredited or are candidates for accreditation by agencies recognised by the United States Secretary of Education or by the Committee of Bar Examiners of the State Bar of California. Because of their accredited status, these institutions are eligible under state law to award certificates and degrees without review by the Superintendent of Public Instruction.

The most distinctive feature of California's accredited independent colleges and universities is their diversity of character, academic emphasis, and programmes. They include both religious and secular institutions, schools offering only a single occupational specialty, as well as universities with the full array of degree programmes. In age they range from the University of the Pacific and Santa Clara University, both founded in 1851, to the DeVry Institute of Technology, Los Angeles, founded in 1983. In size they range from the University of Southern California with over 27 000 students to Deep Springs College with 24 students. Altogether, they enrol about one–fourth of all students attending four–year colleges and universities in California.

Information in the Background Report refers primarily to the 64 regionally accredited institutions that are members of the non–profit Association of Independent California Colleges and Universities (AICCU). Together these institutions, which include such nationally known institutions as California Institute of Technology (Caltech), the Claremont Colleges, and Stanford, enrol approximately 95 per cent of the students in California's regionally accredited independent institutions. Moreover, through the Association they are represented on the California Postsecondary Education Commission, and since the 1960 Master Plan they have participated actively in the co–ordination of Californian higher education.

Most independent colleges and universities are governed by their own boards, with members selected by majority vote of the board. Leadership in policy and management is taken typically by a chief executive officer chosen by the board. Faculty assume major responsibility for academic or educational policies. In California, "independent" colleges and universities are non–profit institutions and are accredited by regional accrediting associations. "Private" institutions are often profit–making and are licensed, in most cases, by the State Department of Education.

Non–accredited degree–granting institutions: Like other American states, California regulates or oversees non–accredited educational institutions to protect the integrity of degrees issued by non–state–supported institutions. It has three different levels of recognition: one level provides for authorisation of theological institutions, and seeks to strike a balance between the need to provide a minimal level of consumer protection and to ensure religious freedom. A second level, providing an intermediate level of consumer protection for students, is an authorisation process which applies some 13 qualitative standards to institutions seeking authorisation. As of November 1987, 85 institutions were authorised. The third level, California's highest level of review for non–accredited degree–granting institutions, seeks to determine whether curricula are "consistent in quality with curricula offered by appropriate established accredited institutions". In 1987, 71 institutions were approved under this process.

Non–degree–granting institutions: Thousands of private educational institutions in California prepare high graduates in skills or for specific careers, but offer them certificates or diplomas of attainment rather than academic degrees. They range from technical institutes, business schools, and hospitals that offer several career programmes to single purpose schools for such careers as aviation, cosmetology, and real estate sales. These institutions and non–accredited colleges and universities are represented on the California Postsecondary Education Commission by a member appointed by the Council for Private Postsecondary Educational Institutions, a group advisory to the Superintendent of Public Instruction.

Higher Education Agencies and Associations

California Postsecondary Education Commission

Created in 1974, the California Postsecondary Education Commission serves as the state agency to "assure the effective utilisation of public postsecondary education resources, thereby eliminating waste and unnecessary duplication, and to promote diversity, innovation, and responsiveness to student and societal needs through planning and coordination."

Of the nine Commissioners representing the general public, three each are appointed by the Governor, the Senate Rules Committee, and the Speaker of the Assembly. They serve six–year terms. The Governor also appoints the representative of the AICCU institutions for a three–year term. Five other Commissions represent the Regents, the Trustees, the Board of Governors, the State Board of Education, and the Council for Private Postsecondary Educational Institutions.

The *California State Board of Education* is the ultimate governing and policy–making body for the State Department of Education and for the schools of the state. The Governor appoints its eleven members for four–year terms. The State Superintendent of Public Instruction, who is elected by the people of California, serves as the Board's secretary and executive officer of the Department. Staff members of the Department work actively with the higher education segments in co–ordinating segmental programmes with the public schools.

The *California Student Aid Commission* is California's state agency that administers state and federal grant and loan programmes, conducts research on student needs and programmes, develops criteria for distributing available aid funds, and distributes information about available aid to potential applicants.

The *Council for Private Postsecondary Educational Institutions* advises the Superintendent of Public Instruction regarding private post–secondary education in California and, in particular, state approval or authorisation of private non–accredited institutions for degree–granting purposes.

The *Western Association of Schools and Colleges* (WASC) is the recognised regional accrediting association for California, Hawaii, American territories in the Pacific, and areas in the Pacific and East Asia where American or international schools or colleges operate. Its purpose is to promote the welfare, interest and development of education in the region through:

- The improvement of education programmes;
- Close co–operation among the region's schools, colleges and universities;
- Certification of institutional accreditation or candidacy status;
- Effective working relationships with other educational organisations and accrediting agencies.

Master Planning for Higher Education

Studies Prior to the Master Plan

Before 1960, state policy in California for higher education was set by the Legislature, Governor and the two statewide boards that governed public colleges and universities — the State Board of Education which oversaw the seven state colleges and co–ordinated the 55 junior colleges, and the Regents of the University of California which oversaw its four campuses at Berkeley, Los Angeles, Davis (primarily agriculture) and San Francisco (a specialised health science

campus), and specialised facilities at Riverside (agriculture) and La Jolla (oceanography). In 1945 these two boards created the Liaison Committee as a voluntary mechanism to assure co–ordination between them.

In 1947 the Liaison Committee undertook a survey of the needs of California for higher education. The results of that survey, *A Report on a Survey of the Needs of California in Higher Education, 1948*, showed the need for two new state college campuses, the expansion of the Riverside facility into a full–fledged University campus, and four new junior colleges.

A subsequent report, *A Restudy of the Needs of California in Higher Education*, undertaken in 1954–55 at the behest of the Liaison Committee, produced many important concepts which later figured prominently in the Master Plan. These included differentiation of functions, achievement requirements for community college transfer students, the planning and development of the University and the state colleges as integrated systems, and the need for a separate board for the state colleges.

In 1957, in response to intense legislative pressure for new state–supported institutions, the Liaison Committee authorised yet another study, *A Survey of the Needs for Additional Centers of Public Higher Education in California*. The study embraced four principles to guide the expansion of higher education:

i) Differentiation of function;
ii) Adequate coverage of the state by community colleges before authorisation of additional four–year campuses;
iii) Consideration of the needs of existing institutions when planning new ones;
iv) Restriction of publicly–supported institutions in areas well served by private colleges.

The Master Plan for Higher Education in California, 1960–1975

In 1959–60, when the historic Master Plan for Higher Education in California, 1960–75 was developed, reviewed, and implemented, master planning for state systems of higher education was not an institutionalised, continuing process in the United States. This was certainly the case in California which had conducted a series of careful studies of higher education. Done on no particular schedule, these studies had produced few far–reaching changes in the state's system of higher education. While these studies had set down an impressive foundation for orderly planning and development of higher education, no lasting solutions had been identifed for the problems of the state. Thus, when the Legislature authorised the development of the 1960 Master Plan, it hoped to defuse mounting legislative pressures for additional campuses, and to find answers to the dilemma of how to provide quality higher education economically for a rapidly growing population.

It was the view of Arthur Coons, the chair of the 1960 Master Plan Survey Team, that the very heart of the plan was its series of decisions relating to structure, function, and governance of the segments. It was because he saw the primary issues of the study centring around the future roles of the public segments and the independent sector, with particular emphasis on how the public segments should be governed and co–ordinated to avoid duplication and waste, that the eight members of the Survey Team reserved to themselves the areas of structure, function and co–ordination, while using other committees for study and advice on the other elements of the review.

From the resulting Master Plan study, many of the major elements are still shaping Californian higher education powerfully to this day. Among these are the following:

— The plan established universal access to higher education as public policy by specifying a place somewhere in the system for all qualified and motivated students.
— It assigned the segments differentiated functions or broad roles within which each was to strive for excellence.

— It recommended a statutory co–ordinating body, the Coordinating Council for Higher Education.
— It proposed a governing board for the state colleges, now known as the Trustees of the California State University.
— It established differential admission pools for the University and State Colleges: the University was to select students from the top 12.5 per cent of graduating seniors, while the State Colleges were to select from the top one–third per cent. Standards were also established for students ineligible initially for the University or the State Colleges but attending a community college, to transfer to the appropriate four–year institution.
— It reaffirmed the principle that the University and the State Colleges were to be tuition–free for the residents of California.
— It developed a number of recommendations designed to strengthen the junior colleges and, by increasing their numbers, to extend their coverage throughout the state.
— It defined junior colleges for the first time as part of the higher education system, although it declared they were also to be part of the public school system, a way of assuring the continued flow of federal funding for vocational education.
— It encouraged and aided independent institutions by extending to them representation on the new co–ordinating agency, and by substantially increasing the fledgling State Scholarship Program from which substantial funding was to flow to these institutions via students' choice of college.

These recommendations constituted a major achievement for the drafters of the Master Plan, now regarded as one of the most influential studies in the history of American higher education. Frank Newman, President of the Education Commission of the States, America's voluntary interstate board for higher education, has observed how fortunate California has been in having a viable differentiation of function policy and thus avoiding the costly annual battles for expansion of segmental missions so often seen in other states. Overall, the majority of the Plan's 67 recommendations were adopted and implemented either by the Legislature or the segments, and the key ones are still in effect.

Subsequent Master Planning Efforts

With the 1960 Master Plan, California entered a new era of periodic master planning at the state level. In one form or another, the two master planning cycles that have followed (1971–73 and 1985–86) have proceeded in the mould established by the plan. In fact, the two subsequent studies have been in very large measure reviews of the plan and the need to add to or change portions of it.

The 1971–73 Joint Committee on the Master Plan for Higher Education

The 1971–73 study was the first review of its kind to be done entirely by the Legislature. The Joint Committee focused on four primary areas:

i) Access and educational equity for ethnic minorities and women;
ii) Co–ordination and planning;
iii) Governance;
iv) Diversity within the system:
— Pointing to the large and growing minority population of the state, the Committee saw clearly that access was of high priority for the state, and that to address it the

state would need to deal with barriers to college attendance, such as income levels, geographic location, age, articulation and insufficiently informed student choice. It recommended that the segments strive to approximate by 1980 the "general ethnic, sexual, and economic composition of recent California high school graduates".

— The Committee recommended replacement of the co–ordinating agency with a new body — the California Postsecondary Education Commission — which was to have a substantially expanded role and new membership for the private post–secondary institutions normally not considered part of higher education. A clear public majority was established for the new agency, and employees of post–secondary institutions were prohibited from serving on the board.

— In terms of governance, the Committee settled on the continuance of the existing system, hoping for strengthened co–ordination through the Postsecondary Commission but recommending that the governing boards should become more representative of the general population, and that students and faculty should be members of these boards.

— In order to further diversity in the system, the Committee recommended individualised missions for the campuses of the existing segments, and, highly controversial, a fourth public segment that should have the primary responsibility for planning and co–ordinating off–campus programmes, and which should be authorised to offer its own programmes and award credits and degrees but which would have no campuses. This recommendation was rejected by the Legislature.

On balance, the 1971–73 report had substantial influence on the future of Californian higher education. A stronger co–ordinating agency was created, access was established as a prime aim for the future, goals and priorities for admission were established as statements of legislative intent, students and faculty gained representation on the governing boards, and a policy agenda was set for the coming decade.

The 1985–89 Review of the Master Plan

The current and on–going review of the Master Plan commenced in March of 1985 with the first meeting of the state's Commission for the Review of the Master Plan for Higher Education, and will have concluded with the final report of the Joint Committee on the Master Plan in March of 1989. The review differs from earlier studies in two important respects:

— First, it has involved two groups: a Commission made up primarily of lay members but including representatives of the segments, and the Legislature's Joint Committee.

— Second, the study has been conducted in two phases: the first centring on a reassessment of the community colleges, and the second on reviewing the Master Plan and higher education generally.

As a result of the reassessment of the community colleges, the Commission grouped major recommendations and findings under six headings:

i) Access and success: The policy of open access was reaffirmed, but the need for policies emphasizing success as well as access was stressed. Consequently, the Commission endorsed a mandatory assessment, counselling, placement, and follow–up programme — the latter to deal with sagging minimum academic skill levels, with remedial programmes to help students succeed.

ii) *Mission and function:* The Commission reaffirmed the primary functions of the colleges as associate degrees, transfer, and vocational education. Remedial education was "important" but seen as a bridge from access to success. The public segments were urged to develop and maintain a general education core curriculum that would assure transfer to the four–year institutions. Close links to business and industry were deemed essential to meet economic development training needs.

iii) *Remediation:* Remediation was necessary to help students succeed and should be mandatory when assessment results so indicate. A limit to the number of remedial courses a student should be allowed to take was endorsed.

iv) *Faculty and administrators:* Noting that California is the only state to retain for the colleges essentially a public school system of credentialling, the Commission recommended new qualifications for faculty, and peer review of new faculty. Much stress was placed on greater faculty involvement in college affairs generally.

v) *Governance:* A number of recommendations were put forward to strengthen the role of the Board of Governors and of the statewide Chancellor.

vi) *Finance:* A more flexible and appropriate system of budgeting was suggested, signalling a move away from a system designed more for the public schools than for institutions of higher learning.

In the Commission's report following phase two, the recommendations were grouped around four principal goals for the system: unity, equity, quality and efficiency.

i) *Unity:* Since the entire spectrum of education from kindergarten to graduate school was one system, greater co–operation was necessary. To further this goal, the California Education Round Table — an informal association of the chief executives of the major sectors of Californian education — was called upon to provide needed operational linkage in the system. While no changes in the grand scheme of function were considered necessary, the community colleges were seen as having principal but not exclusive responsibility for vocational education, and the State University as deserving of state aid for research, scholarship, and creative activity in support of their instructional mission. The University of California's statement of function was left virtually untouched, but for the first time a very general statement of function was suggested for the independent institutions.

No major changes in admission policies were proposed, but the transfer function — from a community college to a four–year institution — was recognised "as a central institutional priority for all public segments", and to further this objective, the University and State University were to maintain the lower division at no more than 40 per cent of total undergraduate enrolment. Addressing governance, the Commission urged centralisation of the colleges and their administration as a "unified state–local system".

ii) *Equity:* In order to further equity, the Commission urged that institutions mount programmes to diversify faculty by recruiting women and minorities; warned against undue reliance on loans as opposed to grants, but saw sufficient student financial aid, adjusted to keep pace with cost increases, as a high priority.

iii) *Quality:* Teacher education should be a high institutional goal, the Commission declared, thus ensuring quality in the public schools. Governing boards were urged to provide for coherence and quality in the undergraduate curriculum and to integrate instructional technologies into it.

iv) *Efficiency:* Responsibility for long–range planning should be assigned to the Postsecondary Education Commission, which should look at the proposed growth and

the need for additional campuses, paying attention to unused capacity in the independent institutions. Attention should be directed regularly to the budget formulas used by the state to fund the public segments.

Many of the recommendations in phase one of the Commission's work were taken up by the Joint Committee in its own phase one work and then later incorporated in legislation which passed the Legislature and was signed into law by the Governor in 1988. These included provisions to clarify community college finance and governance, and to improve the quality of students and faculty. The Joint Committee has similarly embraced a number of the Commission's recommendations, with notable exceptions, in the draft of the phase two committee report. The full extent of Commission influence on this area will not be known until the Joint Committee report will have been made final later in 1989.

If the experience of the last 28 years is any guide, California seems to have accepted the notion that periodic evaluations of its total system of higher education are necessary to validate the overall higher education Plan, to endorse new policies as needed, and to evaluate the interrelationship of the constituent parts of the system. It is very likely, then, that California will undertake major master planning projects in post–secondary education every ten to twelve years, at the initiative of the Legislature or the Governor, or both.

Chapter 2

FINANCING HIGHER EDUCATION

Levels and Sources of Support

Higher education finance in recent years has been dominated by the efforts of state leaders to adapt funding mechanisms to major changes in taxing and spending policies brought about by the adoption of electoral initiatives, the most significant being Proposition 13 (1978 — limitation on property taxation) and Proposition 4 (1979 — the Gann ceiling limiting state appropriations). Thus, the decade of the 1980s has been a very mixed one for the financing of the segments, a situation complicated by a scaling back of the federal presence in student financial aid, most notably by shifting massive funding from grants to loans.

American colleges and universities rely on many sources of support, both public and private, state and federal, and which embrace student fees, alumni contributions, and private philanthropy. Within the public sector the University of California has the most varied sources of financing, a result of the complexity of its mix of instructional, research and public service programmes. The state and federal governments are the two most important sources of funding for the University, yet state funding accounted for only 37 per cent of its 1987 budget, exclusive of funding for its federally supported energy laboratories. Substantial revenues accrue from student fees, charges for services such as medical care in its clinics and hospitals, and private gifts. But for the University as for the State University, the state financing supports the core academic enterprise, and all faculty positions are funded by state money.

A much higher proportion of the State University budget comes from the state, but federal funds are very important for student aid. Traditionally, the State University has not relied on private sources of support as heavily as the University of California, but it raised $47 million from private sources in 1986–87 and will place greater emphasis here in the future.

Independent institutions do not receive state funding because the Californian constitution prohibits such aid to private entities of all kinds. These institutions look to the state, then, for "portable" student financial aid, and they depend on tuition and private gifts far more heavily than do the public institutions. Federal aid is important to the entire segment for student financial aid, and research institutions receive substantial federal research support.

In fiscal year 1986, ten Californian institutions were among the top 100 recipients nationally of federal funding. Three were independent institutions: Stanford ($201 million); the University of Southern California ($92 million); and the California Institute of Technology ($64 million). The other seven were University of California campuses: Los Angeles ($149 million); San Diego ($147 million); Berkeley ($126 million); San Francisco ($119 million); Davis ($54 million); Irvine ($42 million); and Santa Barbara ($37 million). In 1985–86, Stanford led all United States higher education in private fund–raising, receiving some $179 million; it seeks to raise $1.1 billion

by 1992 in its current centennial drive. As of 1985–86, seven of the top ten Californian colleges and universities in terms of private fund–raising were independent institutions.

State Financing of the Public Four–Year Institutions

In California the annual state budget legislation carries the appropriations for all state programmes and agencies — a notable difference from the federal situation, where a number of appropriation bills allocate funds. This fact, and California's constitutional requirement that the budget be balanced as submitted by the Governor and as finally enacted, facilitates the setting of priorities, the review of state policy in the budgeting process, and programmatic trade–offs. Additionally, the Governor may disallow or reduce individual items within the budget, actions which may only be reversed by a two–thirds vote in each house.

Within the budget, General Funds (those funds that may be used for any purpose and are not dedicated to a specific programme or activity) account for roughly 50 per cent of all spending. Higher education is greatly dependent on these monies, whereas some other programmes are funded from sources reserved solely for those purposes. Higher education funding comes from the portion of the budget that is wholly at the discretion of the Legislature to appropriate. Other funding for some other programmes is appropriated as an entitlement, and the level of funding is required by law. Thus, higher education must compete with other state programmes for operating funds; and at times of sudden cutbacks in state spending it may take disproportionate cuts due to its reliance on the general fund appropriations and the discretionary nature of higher education funding.

Steps in the Budget Process

The budget process for the State University and the University of California is relatively similar, particularly in the initial phases. Both segments begin work on the budget a year before it will be submitted to the Legislature. Thus, at any time during the year, the budget offices of the respective institutions can be closing the books on the year just concluded, dealing with current–year budget problems and consulting about elements in the coming year's budget.

Both segments submit budgets based on the previous year's appropriations, adjusting spending levels for fixed costs such as price increases, and for workload increases. Price increases are generally assigned by the State Department of Finance on the basis of an overall price index of commodities and services. Unusually high levels of price increases may be allowed when exceptional justification is made. Further adjustments to baseline budgets are made for the additional workload resulting from enrolment increases. At a later step, new or expanded activities are proposed through "budget change proposals". These proposals, usually only partially allowed by the Governor, are the focus of particular debate as the segments' budgets proceed through the legislative process.

The California State University and the University of California project their needed faculty salary increases on the basis of comparisons with groups of similar institutions approved for this purpose by the Postsecondary Commission. An annual report is then prepared by the Commission and it includes a calculation of the level of increase needed to produce parity with the average of the comparison group. During the budget process the staff of the Postsecondary Commission review and analyse budget change proposals submitted to them by the Department of Finance, attend budget hearings conducted by the Department, and testify before legislative committees. At the end of the process, staff are often called upon to assist in negotiations over language to be included in the budget.

Altogether, in the 1987–88 State Budget, the University of California received $3.8 billion from all fund sources for its operating budget (an increase of 5.7 per cent over 1986–87), plus an additional $140.3 million for capital projects. The California State University received $2.2 billion for current operations (an increase of 5.9 per cent), plus over $106 million for capital projects.

Financing of Independent Institutions

The primary sources of operating funds for California's independent colleges and universities are the tuition paid by students, gifts from donors, and income from endowment provided by the institutions. When the California Postsecondary Education Commission last reviewed the financial condition of the independent institutions, it had some reasons for concern. Nationally known institutions had fared well in attracting private support, but others had lost ground. Moreover, the increasing cost of attendance at these institutions had caused a number of institutions to divert funds from faculty salaries and library support to provide student financial aid. Student fees for AICCU institutions increased 142 per cent from 1976–77 to 1985–86, greatly outstripping increases in federal student aid (75 per cent) and in the principal state grant programme (52 per cent).

A further concern is the growing reliance of public and private institutions alike on private sources of gifts and donations. In view of such pressures, a number of recommendations of the Commission for the Review of the Master Plan have special relevance for independent institutions. That Commission proposed a guarantee of financial aid to optimise student choice to all needy students, urged that the number of state–grant awards and the maximum allowable size of such grants be adjusted to reflect enrolment and the average per student costs at the four–year public institutions.

Student Charges

Student fees increased dramatically in California's public universities at the beginning of the decade but have remained stable since. (Note: very substantial increases in the order of 10 per cent are proposed for resident students at the University of California and the California State University in the 1989–90 Governor's Budget.) For example, fees for the University of California undergraduate resident students jumped from $775 annually to $1 300 in 1982–83, and 1987 fees were set at $1 492. The State University's fees jumped in the same period from $222 to $505, while its 1987–88 fees were set at $754. Total fees paid by out–of–state students (i.e. non–resident tuition in addition to the above resident fees) were set for 1987–88 at $5 782 at the University of California and $5 164 at the State University.

Until 1984, California's community colleges had offered free tuition, except for various discretionary fees charged by local districts. The statewide community college fee became effective in July of 1984. It was expected to save the State General Fund nearly $75 million in 1984–85 by imposing a $50 per semester fee for students enrolled for six or more semester units and a $5 per unit charge for those enrolled for less than six units. Studies into the impact of the fee suggest that the greatest loss of enrolment in the community colleges came before rather than after the institution of the fee. The lengthy debate between Governor and Legislature over instituting the fee, and the resultant student uncertainty, may have contributed to this pattern.

The tuition and fees for member institutions of the Association of Independent California Colleges and Universities increased on the average from $3 178 to $7 700 annually, or 142 per cent, between 1976–77 and 1985–86.

Student Financial Aid

Student financial aid in California from all sources amounted to nearly $1.5 billion in 1985 and assisted some 330 000 post–secondary students. Of this total, only $152 million was classified as state aid (i.e. aid administered through the California Student Aid Commission), while $271 million was "institutional" aid awarded at the discretion of institutions but including some funding provided to the public segments by the state; $372 million was federal aid in the form of grants; and the largest proportion — $699 million — was "other" aid, consisting mostly of Guaranteed Student Loans that were funded with money from private lending institutions but guaranteed by the federal government.

The Federal Role

The federal government has played a predominant role in providing aid nationally since World War II. The so–called "G.I. Bill of Rights" that assisted returning servicemen to resume their education and productive careers launched a series of federal programmes that became the principal source of aid to students throughout the country, with state and institutional programmes supplementing their major contribution. Federal monies are now distributed primarily through Pell grants, which were awarded on the basis of need to some 2 853 000 students nationwide in 1984–85 at an estimated average award of $1 105. That same year, Supplemental Educational Opportunity Grants averaging $550 went to 655 000 low–income students in order to bring expensive private higher education more within their reach. Federal grants have been a vital source of aid for students and a major determinant of access nationwide, but in recent years they have not been adequately adjusted for inflation, thus diminishing their relative value and causing huge growth in the Guaranteed Student Loan Program.

The Institutional Role

Aid awarded by institutions and usually funded from institutional sources is a second major component of student assistance. Generally, this aid is available in substantial amounts at independent institutions and at the University of California — accounting in 1984–85 to 38 per cent of all aid at independent institutions and to 33 per cent at the University. Corresponding percentages for the California State University and the community colleges were 7 and 10 per cent respectively. Because independent institutions have apparently financed growth in institutional aid in recent years by increasing fees and tuition, the California Postsecondary Education Commission has suggested the state might more explicitly help the independent sector. CPEC staff have suggested possible different financial aid models for the public and private sectors, the creation of a better aid data system, loan forgiveness for prospective teachers, and the rethinking of financial support for graduate students.

The State Role

The principal aid programmes administered by the California Student Aid Commission (CSAC) are the "Cal Grant A" and "Cal Grant B" Programs. Under these two programmes, the state made $110 million in awards in 1986, out of a total award for all CSAC programmes of $119 million. The other five CSAC programmes included the Cal Grant C Program, which

provided some $3 million to needy students in vocational training, and the Graduate Fellowship Program in which total aid of $3 million provided fewer than 900 awards in 1986–87.

The Cal Grant A Program provides grants to academically accomplished students to assist with tuition and fees. It was expected to further student choice and indirectly assist independent institutions by facilitating student choice. Yet over the period 1956 to 1986, the percentage of Cal Grant A recipients attending independent institutions declined from 63 to 30 per cent. In its first year — 1956–57 — it made 640 awards. More than 43 000 awards were made in 1986–87 of $76.4 million. Cal Grant B provides educational expense and some subsistence funds to educationally disadvantaged students, and it is explicitly targeted to students attending public institutions, particularly community colleges. More than 24 500 awards were made in the programme in 1986–87 and a total amount of $33 357 million distributed.

The Role of Loans

It is estimated that more than 3.3 million students nationwide borrowed about $9 billion in federally guaranteed loans for 1985–86. Concerns have been growing about the increased reliance of students on loans to finance their education, which has occurred because of failure to adjust fully the level of state and federal grants for inflation and to expand the number of grants to keep pace with increases in enrolment. Federal and state grants met 66 per cent of Californian students' total financial aid need in 1979 but only 44 per cent by 1986.

Future Funding in California

While the underlying prospects for the California funding base look promising, with most predictors indicating that the broadly based Californian economy is likely to continue to out–perform the nation and that state revenues will remain strong, several questions require answers: among them, its resources for meeting capital construction needs of the segments, and the state's legal basis for controlling expenditures.

Capital Outlay

The first major question concerns capital outlay funding for higher education construction, renovation and repair. The three public segments have estimated their capital needs — existing and projected through the year 2000 — as amounting to $3.6 billion for the University of California, $3.3 for the California State University, and $780 million for the community colleges.

The Gann Ceiling

The second question centres around the Gann ceiling — an overall expenditure limit on state spending approved by the voters in 1979, a year after the passage of Proposition 13. The initiative limits the level of tax–funded appropriations that can be made by the state or local governments in any year. The limit is determined by adjusting that for the previous year according to population, and by changes either in the U.S. Consumer Price Index or in the per–capita income in California, whichever is less. Revenues raised by the state through regular taxing channels but which accumulate in excess of the expenditure limits must be refunded to the taxpayers — as indeed they were in 1987 — even if substantial unmet programmatic needs exist.

The Legislative Analyst — the state's advisor to the Legislature on fiscal and programme policy — believes that the Gann ceiling will be a significant restraint on California's ability to maintain essential state services in future years. The Commission for the Review of the Master Plan warned that the state's expectations for post–secondary education institutions must be matched by a willingness to support these institutions. In the Commission's view the Gann ceiling renders the maintenance of current levels of services difficult and the introduction of reforms dubious. An additional problem was introduced into the funding picture by the passage of a ballot initiative, in November 1988, which partially amended the Gann limit by freeing funding for the public schools from expenditure constraints, while guaranteeing to the public schools a minimum proportion of the state general funding. Many efforts are now being directed to finding ways to address the Gann limit and funding restrictions generally.

No consideration has greater implication for the financing of Californian education than resolving this constraint of state policy and appropriation levels. A very wide range of programmes in the schools and in post–secondary education are directed to raising preparation levels generally and to retaining underrepresented minority and low–income students in the education system and recruiting them in successful post–secondary experiences. These programmes are of profound importance to the state in social and economic terms, but they are costly and require stable state financing over a period of years for success.

Co–ordination of Higher Education

Co–ordination is a pervasive and decentralised function in a system of colleges and universities as large and diverse as California's. The state has no overarching department of education to provide highly centralised direction to the higher education enterprise. Instead, many areas of academic decision–making require reconciliation of competing demands and interests through consultation, negotiation, and accommodation. Within individual institutions, co–ordination of decision–making occurs at the departmental and divisional levels, at that of the academic senate and its multiplicity of committees, and of course at the level of the campus chancellor or president. Between individual campuses and the segmental central office, similar levels of co–ordination exist, as they do among the segments and with state agencies.

Co–ordination of Higher Education in the United States

Since California adopted its Master Plan for Higher Education in 1960, state co–ordination of colleges and universities has become institutionalised on the American scene. State co–ordinating agencies first developed in the late 1920s and early 1930s as a response to the dire resource problems faced by the states as a consequence of the Great Depression. Following World War II, the number of such agencies continued to grow, as states reacted to the rising expectations for higher educational opportunities set in motion among returning veterans of the War. More recently, the factor that quickened interest in co–ordination and planning was the expectation in the 1960s of large enrolment increases that would strain the resources of every state and threaten levels of educational quality. In the United States today, statewide co–ordinating agencies are usually classified into two broad categories:

i) The single governing board for all public institutions in the state;
ii) The co–ordinating board that works with the governing boards of the segments or individual institutions, in either a regulatory or advisory capacity.

In 1985, statewide governing boards numbered 22, while co–ordinating boards, both regulatory and advisory, numbered 27. Of the 27, 20 are regulatory and only seven (including California's) are advisory.

Co–ordination under the California Education Postsecondary Commission

The history of co–ordination in California prior to 1960 was one of voluntary co–ordination between the two governing boards for higher education — The Regents of the University of California and the State Board of Education, which governed the state colleges and oversaw the community colleges. With the Master Plan, California joined the nationwide movement to statutory co–ordination by creating its first co–ordinating agency — the Coordinating Council for Higher Education.

The Coordinating Council functioned with some success for a decade, but when the Legislature's Joint Committee reviewed the Master Plan in 1973, it concluded that although the structure and governance of higher education was in general adequate, its principal deficiencies could be traced to various problems of the Council. Co–ordination is the critical element in a well–functioning system of higher education, the Committee concluded. An independent agency capable of articulating statewide needs and providing advice to the segments and elected state officials was needed.

Consequently, the Council was abolished and replaced by a new California Postsecondary Education Commission with a majority of public members, a scope broad enough to include all post–secondary education, and a mandate to play an active role in continuous planning, taking into account the state's projected educational needs as well as its present institutional resources. In addition, the Legislature directed the new Commission to provide advice on segmental budgets, review and to comment on proposed programmes, advise on the need for and location of new public institutions and campuses, and to review all proposals to change eligibility requirements. It also designated the Commission as California's federal agency to administer certain federal programmes and receive federal planning funds.

Organisation of the Commission

The Commission consists of 15 members, nine of whom represent the general public, and the other six the major segments of Californian education. The work of the Commission is carried out by a staff located in Sacramento and headed by the executive director, an appointee of the Commission. Other members of the staff, of whom there are presently 53, are appointed by the executive director. Its liaison staff deal on a daily basis with the legislative and executive staff, government officials, and media representatives. Its research staff prepare the reports reviewed and approved by the Commission, of which some 40 to 50 are published annually, and carry on a variety of continuing activities.

Role of the Commission

Four closely–related functions or services are the prime avenues through which the Commission discharges its responsibilities:

— Co–ordinating activities among the segments;
— Evaluating state–funded programmes;

— Planning;
— Acting as an information clearinghouse.

Ultimately, all of the Commission's activities are directed to advising the Governor, the Legislature and the segments about future policy and practice. The most tangible form of this advice is to be found in the formal recommendations in the many studies it undertakes, but through a range of activities and in a variety of forums the Commission brings its views to a wide audience throughout California.

A major new initiative for the Commission is being undertaken by the staff in the area of long–range planning. Staff urged the development of this new capacity because of the growing population of the state, the pressures to build new post–secondary educational facilities, and the likely implementation of a comprehensive longitudinal student data base that should provide researchers with empirical information about factors affecting success or failure of students.

Current Priorities of the Commission

In the Commission's 1987–88 work plan, the staff has proposed 46 activities grouped under the following six broad categories of themes that reflect the Commission's current areas of concern and interest:

i) Long–range planning to meet California's educational needs;
ii) Linking educational institutions more effectively;
iii) Ensuring equal educational opportunity in post–secondary education;
iv) Incentive funding, assessment, and outcome measures: the state's role;
v) Developing effective statewide programmes.

Of the 46 items in the work plan, only six are clearly initiatives of the Commission staff; most of the others reflect legislative interests. This distribution is fairly typical and illustrates how the initiatives the Commission can launch are severely constrained by legislative requests and, of course, resources.

Intersegmental Co–ordination through the California Education Round Table

In May 1980 the segments in California joined together to form the Round Table dedicated to improving the quality of education at all levels. Membership included the chief executives of the four higher education segments, the Superintendent of Public Instruction and the executive director of the California Postsecondary Education Commission.

The Round Table proved very effective as a forum for exchanging views among the leaders of Californian post–secondary education and in facilitating selected intersegmental projects. Over the years, the number of projects undertaken, as well as the scale of segmental involvement and financial support, increased dramatically. The focus of efforts has generally remained on increasing access for underrepresented minorities, with many of the programmes occurring in the public school setting.

In 1986 the Round Table redefined its goals and structure to reflect a broader concern with issues relating to educational policy. In particular, the new emphasis responded to a perceived state need for co–operation among the segments. Interest in programmes which cut across segmental lines was growing in Sacramento, and an increasing need was seen for improved administrative co–ordination of intersegmental programmes, since their number had augmented.

A new entity — the Intersegmental Coordinating Council (ICC) — is responsible for ensuring that the Round Table mandate for creating more effective intersegmental relations is carried

out. The ICC is advisory to the Round Table, which sets the agenda for addressing the intersegmental issues, determines priorities, and identifies necessary resources. Comprised primarily of faculty leaders, students and policy–level staff from the segments, the Council sees one of its most important responsibilities as deciding which issues should be addressed intersegmentally. These are then dealt with through a series of "cluster" committees on transfer and articulation, curriculum and assessment, outreach and student preparation, and improvement of teaching.

Higher Education and the Economy

Throughout the United States, higher education is the focus of attention of public officials and business leaders because of the growing appreciation of the ways higher education contributes to economic development, competitiveness, and technology transfer. National and state officials are urgently searching for new ways to link business and higher education and to channel these co–operating forces into new activities contributing to the economy. A number of states are competing intensely for industries, government contracts and grants, foreign investment, and national research facilities.

In this competitive environment, California is in an unusually favourable position. The importance of its extensive, diverse system of higher education has long been understood in the state, in contrast to the neglect and erratic support seen in many other states. Because of the size and scope of the Californian higher education system, it is a major element of and contributor to the Californian economy. Additionally, economic development activities in California can build on the relative harmony among the segments and on the history of strong links between the various institutions and the business community. Above all, California's position on the edge of the Pacific Basin means that California is in proximity to the fastest growing sector of the international economy.

The Economic Impact of Californian Higher Education

California's colleges and universities have a remarkable effect on the state's economy through the contributions of their research and teaching to the expansion of business and industry and to the increased employment skills, productivity, and earning power of their graduates. Apart from these indirect impacts, there are direct benefits for the state that at last report came to over $28 billion annually — an amount equal to 8 per cent of the state's total gross product.

These conclusions stem from a 1983 study of the economic impact of higher education undertaken by the three public segments and institutions of the AICCU. The University of California assessed its direct impact as $8.6 billion annually. An estimated 308 000 jobs were created within the state as a result of University expenditures. The State University concluded that its direct expenditures and those of its staff, students, and visitors amounted to $2.1 billion, generating business activity of $2.9 billion for a direct impact in excess of $5.0 billion. The State University believes that an additional 191 629 jobs were created as a result. Community college expenditures were estimated to be $2.8 billion, plus a multiplier impact of $4.145, for a total impact of $6.9 billion. At least 121 000 jobs outside the system were created as a result. For the 60 member institutions of the AICCU at the time of the study, the total expenditures were $2.2 billion, of which only $58 million came from the State of California. Total economic impact from direct expenditures were estimated to be $7.7 billion.

The special relationship that California has with many nations of the Pacific Basin and its favourable location on the Pacific, make California the hub of American trade with these countries. Eighty per cent of the trade now passing through the ports of California is with the Pacific Rim nations. In order to expand trade further with the Pacific region, considerable co–operation and effort are needed on the part of Californian business, government and education in the face of strong competition from many other American states.

In a major study of California's connection with the Pacific Rim, the California Economic Development Corporation — a non–profit group broadly representative of industry, agriculture, finance, and education — noted:

- California exports approximately 40 per cent of its high technology products and up to 80 per cent of its major agricultural crops.
- It attracts more foreign investment than any other state.
- It is the location for over 90 different banks, branches, and agencies from Pacific Rim countries.
- In 1983, direct foreign investment exceeded $27 billion, of which $15.5 billion was from European nations.
- One Californian job in ten depends on international trade.
- Total trade passing through Californian ports amounts to $94 billion annually. Pacific Rim trade amounted to $81 billion in 1985, with the state importing twice as much as it exports.
- Asian–Pacific immigration to California has totalled more than 700 000 since 1950, and over 505 000 since 1970. Over 35 per cent of Asian–Americans graduate from college (double the national rate for Whites) and have incomes considerably above white median income.

For the last several years, California's colleges and universities have been moving to strengthen ties with the Pacific Rim. They increasingly view persons native to one or another of the Pacific countries as assets to the state and as links to the developing region; and while their Pacific Rim activities have varied from segment to segment, they have included language training and international education (particularly in international business), cultural and other studies, education abroad programmes, and research encompassing experts from many disciplines.

The California Economic Development Corporation has recognised higher education as one of the great strengths on which the state can continue to build a vital economy. It recommends special roles for higher education, including, most notably:

- Establishment and operation of a centre for translating foreign scientific journals and relevant documents, thus broadening access to technological developments;
- Expansion of research and development to improve application of technology to production, particularly applied research in agriculture and "culturally oriented" market research to reveal leads to new markets for Californian products;
- Increased retraining programmes;
- Internationalisation of the curriculum with special emphasis on language training and international studies generally. The Postsecondary Commission has noted a definite need for substantially larger enrolments of students at advanced language levels.

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Economic Development and Higher Education

The importance of the Pacific Rim as a major and growing component of economic activity in California has been widely recognised, as has the role that higher education must play in realising the full economic potential of this relationship. But the Pacific Rim is just one area of unusual opportunity. Overall, California faces widespread competition from other states in every field touching upon economic development. Together, Californian higher education, the business community, and state government must face the challenge of forging new links that will permit higher education to contribute most effectively to competitiveness.

One goal of this dialogue will be to achieve greater understanding by higher education institutions of the educational needs of business and industry on a continuing basis and how these needs can be related to institutional missions and goals. Faculty will need to be involved in this continuing dialogue, so that they are fully aware of developments and are convinced of the educational integrity of the partnership. Consultative processes are now being explored which may result in changes in the traditional ties with business, thus affording new opportunities for crafting educational offerings to meet business needs.

At the same time, business can enhance the potential of higher education by assisting institutions in acquiring modern, up–to–date equipment. State government support is vital for the enormously expensive facilities and instrumentation needed by research institutions for some specialties. Moreover, the growing tendency for distributing larger amounts of federal research funding outside the merit system will weaken rather than enhance the nation's competitive stance. In California, representatives of the state, business, and higher education need to take stock of how they work together in the development of proposals for large scientific projects that require a unified bid from the state. In recent years California has lost out on a number of major research initiatives in the areas of earthquake investigation, semiconductors, and the supercolliding superconductor. It is time to take stock of how the state comes together to develop these complex proposals, and to explore ways to regularise procedures so as to minimise the political confusion that marked the state's development of its superconductor proposal.

Chapter 3

THE EDUCATIONAL ENTERPRISE

California's system of higher education consists of a wide variety of learning environments — from the flexibly scheduled day and evening classes for part–time students of the community colleges to the intimate learning–and–living residential experience for full–time students offered by small independent liberal arts colleges — whose average student–faculty ratio of 10:1 is the lowest of any type of institution in the state. These varied courses support the Master Plan's conception of balance of higher education, simultaneously offering both open access to the community colleges and selective admission to the public universities and independent institutions, thereby providing education to a large number of the state's young adults through systems appropriate to the characteristic of each institution.

Size and Scope of the Enterprise

In 1986 the University of California enrolled 152 000 students on its nine campuses in baccalaureate, Master's, doctoral, and professional programmes. Of that enrolment, 64 per cent of the students were White, 14 per cent Asian, 4 per cent Black, 8 per cent Hispanic, 2 per cent Filipino, and 0.5 per cent American–Indian. Non–citizen enrolments (consisting of non–resident aliens, resident aliens, and refugees) are increasing, having accounted for 13 per cent of the University's total enrolment in 1985. More than 90 per cent of the University's undergraduate student population fall into the "traditional" college–age group of 18–24 year–olds, 90 per cent of whom attend full–time and graduate with a Bachelor's degree in four to five years. In 1986 the undergraduate student body of 112 500 students was evenly composed of men and women, while among graduate students, men outnumbered women by three to two.

In 1985–86 the University awarded a total of 21 374 Bachelor's degrees, 4 912 Master's degrees, and 1 649 doctorates. Its professional schools conferred some 2 136 degrees in education, law, medicine, dentistry, optometry, pharmacology, and veterinary medicine. With 563 regular degree programmes and 43 professional schools, 11 000 courses and 350 000 students in University Extension, and a 1986–87 budget of $6 billion, the University is a vast enterprise.

The California State University in the Fall of 1986 enrolled 333 000 students in 1 500 Bachelor's and Master's degree programmes in 200 subject areas. In 1985–86 the State University awarded 44 292 Bachelor's degrees, 8 645 Master's degrees, 12 joint doctorates, and 9 184 teaching credentials. The 266 000 undergraduates are the same age as University students when they matriculate as freshmen, and younger than community college students. Only 70 per cent enrol full–time. In the Fall of 1986, State University graduate students numbered 32 513, of whom 16 per cent were enrolled full–time. Women outnumber men, comprising 53 per cent of

undergraduates and 59 per cent of graduate students. Approximately 85 per cent of all students are Californians, while foreign students constitute 12 per cent. Sixty–seven per cent of students reporting their ethnicity in 1985 were White, 13 per cent Hispanic, 8 per cent Asian, another 8 per cent Black, 2 per cent Filipino, and 1 per cent American–Indian.

Teacher education has been a core function of institutions in the system since their earliest days as "normal schools" and then "teachers colleges" through the Master Plan designation of teacher education as their primary responsibility. Recently the institution has responded to general concerns, both national and in California, regarding the quality of teacher education, the number of persons being prepared compared with the needs of the schools, and the question of the ethnic diversity of those preparing to teach. The State University has defined its responsibility for teacher education as embracing entire campuses and not just departments of education. A wide range of initiatives are being directed at elements of the problem:

- — Raising standards for admission to and completion of teacher preparation programmes;
- — Encouraging teaching as a career through information campaigns aimed at prospective teachers;
- — Recruiting minority students through co–operative programmes with local high schools.

Over 20 000 students are now enrolled in professional programmes for elementary and secondary credentials.

In 1984–85, California's accredited independent institutions enrolled 190 000 students and awarded 20 000 Bachelor's degrees, 29 785 Master's degrees, 6 146 professional degrees, and 3 716 doctorates. These degrees accounted for one–quarter of the state's baccalaureates, half of the Master's, 70 per cent of its professional degrees, and half of its doctorates. Three institutions — Stanford, Caltech and the University of Southern California (USC) — alone accounted for 30 per cent of the doctorates in science and engineering.

In 1986, 20 per cent of the state's undergraduates were enrolled in these institutions. Graduate programmes in the professions are offered by two schools of architecture, three medical schools, three dental schools, twelve American Bar Association–accredited law schools, 13 engineering programmes, and 40 teacher training programmes. A number also offer theology programmes. Economic profiles of students at independent institutions dispel the myth that this sector of higher education is reserved for the rich. Also, Californian residents enrolled in these institutions receive barely more than 2 per cent of state expenditures for four–year higher education, and increased tuition costs have raised the question of continued access of Californian residents to them.

Issues in Undergraduate Education

Within the diversity of Californian higher education, all segments share undergraduate education, particularly the first two years or "lower division" of the curriculum. All four major segments share certain assumptions about the nature of this undergraduate curriculum which emerged from the development of American higher education. Key to these assumptions is a balance of courses to provide the student with appropriate *breadth* of subject matter, as well as sufficient *depth* in a particular academic specialisation. To attain educational breadth, students must take a certain array of courses under the rubric of "general education". As it has evolved over time, the general education portion of the undergraduate curriculum is fulfilled at most institutions with lower division courses. While many questions currently exist about the extent to which institutions have

successfully balanced educational breadth and depth, these basic goals still guide the curriculum of Californian colleges and universities.

The debate about the weighting of breadth and depth in undergraduate education has been prompted in large part by long–term student interests. Enrolment patterns among Californian students have followed national trends, shifting away in recent years from the humanities and social sciences to occupationally–oriented programmes related to California's technological economy. This strong interest in majors leading directly to employment opportunities has placed considerable stress on the guiding principles of the traditional undergraduate curriculum. Most campuses, however, still regard their central purpose to be the provision of a more generalised "liberal arts" education. Recent evidence suggests quickened interest by educators and students alike in traditional liberal arts. Implications of increased value placed on the curriculum will be the reinvigoration of traditional liberal arts colleges. In the larger research universities, too, the liberal arts are experiencing reinvigoration.

Graduate Education and Research

The University of California presented the following overview in a recent budget proposal to the state:

> "The University's basic research programs yield a multitude of benefits, ranging from the discovery of new knowledge, the excellence of the University's instructional programs, and direct impact on the State's and the world's economy stemming from increases in industrial and agricultural productivity, to advances in health care and general improvements in the quality of life. A stimulating research environment at the University attracts outstanding faculty, enhancing the quality of education available to students at all levels."

This characterisation suggests the ways in which American universities have developed a unique relationship between undergraduate teaching, the training of graduate students, and the creation of new knowledge through research.

Functions of the American Research University

Basic research — that undertaken to understand the fundamental nature of things without the deliberate intention of solving a practical problem to achieve specific ulterior ends — has traditionally been the task assigned in America to academic institutions. As early as 1876, Daniel Coit Gilman — the president of the nation's first research–oriented university, Johns Hopkins — advocated that research, teaching, and community service should form its closely interrelated functions. This assumption that the research university had a trio of important missions carries within it, however, certain implied tensions that have not always been obvious. As late as the 1960 Master Plan, for instance, research and instruction were assumed to be generally compatible functions that did not require comment. Yet the dramatic escalation of federal funding for academic research since World War II has accentuated the tension inherent in the assignment of multiple missions.

Research and the State

The form that research funding has taken in America accentuates tensions among university functions. For instance, university research is supported from a variety of fund sources but, among

these, the federal government has provided the largest share since World War II. The scientific war effort was organised as an independent civilian enterprise managed by industrial and academic scientists in equal partnership with military officials. Research was fully funded by the federal government, but scientists remaining in their own institutions conducted the research under contract. This apparatus was retained after the war in order to respond to a new set of national concerns, especially in nuclear energy and aerospace. The new technologies required could not be developed by the private sector alone. In the 1960s the universities again received funds to support projects designed by social scientists and humanists to understand and deal with poverty and racism. The tradition, then, of housing federally–funded research within the teaching environment has become firmly entrenched in America.

Yet total government contributions have not kept pace with expanding research needs. Basic research costs have risen more rapidly than the general inflation rate, both because of the growing sophistication and complexity of scientific instrumentation, and because of the expanding need for related facilities, such as data banks. While the federal government continues to be the major contributor of funds to university research, its contributions have fluctuated significantly.

The Relation of Graduate Education to Research

If research universities have played a central role in the state's economy, enabling it to remain competitive internationally, an important part of that role has related to graduate education. It is in the universities that replacement faculty are formed, that researchers are trained to work in "research and development" divisions of industry, and that the professionals necessary for staffing the infrastructure of the world's sixth largest economy receive their specialised training.

Three functions suggest the varying contributions made to the state by graduate education in California. These include:

i) The training of new faculty and researchers to renew the professoriate;
ii) The training of professionals — in law, medicine, business, and the like — essential to retain California's competitive edge;
iii) The conduct of research on, and the preparation of, teachers and administrators for the primary and secondary educationa linstitutions in the state.

These tasks have been taken on in distinctive ways by California's public and independent institutions.

In the Fall of 1986, the University of California enrolled 27 703 graduate students in 293 degree programmes, and an additional 12 253 graduate students in the health sciences. Approximately 2 700 doctorates were awarded for 1985–86 in the leading fields of the biological sciences, business and management, engineering, law, medicine, the physical and social sciences. In 1965–66, federal grants and contracts provided 64 per cent of the University's total research expenditures. By 1985–86, however, the federal contribution had dropped below 59 per cent of total expenditures. However, growth in federal funding has been relatively strong since 1982–83, in part because faculty have competed vigorously for funding and because increased state support for the University during this period has improved its competitive position. With the focus of the federal government now on deficit reduction, future prospects for growth are unclear.

State support for research at the University takes three forms: first, the state provides "block" grants which the University may distribute as it sees fit among several research categories. Most goes to the organised research units conducting research on each of the campuses. Second, the state provides some funding for special areas through categorical augmentations. These areas represent public policy areas that the state and the University mutually agree are important issues warranting

research attention. Third, the state contributes to "departmental research", that portion of faculty time spent on research as a part of their normal workload.

In recent years the California State University has been increasingly involved with both doctoral training and research. These involvements stem from the Master Plan, which permitted joint doctoral programmes between the two four–year systems of public higher education and which authorised faculty research at the State University to the extent it was consistent with the primary function of instruction. Over the years, the joint doctoral programmes have grown both in number and enrolments. Currently, seven doctoral programmes are operated jointly by campuses of the State University and the University of California, and one programme involves San Diego State University and the Claremont Graduate School, an independent institution. In the Fall of 1985, 100 students were enrolled in these programmes, which awarded twelve joint doctoral degrees during the 1985–86 academic year. Similarly, research funding has grown steadily within the State University, despite the state's reluctance to fund instructionally–related research authorised in the Master Plan. Funding for research in the system exceeded $115 million in the year ending June 30, 1987. Nearly $95 million of this amount came from the federal and state governments, with the federal government underwriting considerably more than half — $60.3 million. The state accounted for $34.0 million. The state's 1988–89 budget included an allocation of $2.5 million to establish a programme of state support for faculty research.

California's independent research universities are not directly involved in the annual state budget process, but nevertheless they still must demonstrate a responsiveness to Californian issues in their combining of research, teaching and public service. They prepare half of the state's graduate degree recipients, and two–thirds of its professional degree holders. The University of Southern California, the largest independent research university, enrols 14 000 full–time equivalent graduate and professional students, one–fifth of whom are international students and one–fourth minority students. These students can earn a Master of Arts degree in 40 programme areas, a Master of Science in 59 programme areas, and a Master's level degree in 19 additional specialised professional programmes, and doctorates in 65 disciplinary and nine professional programmes. The University awards 4 000 graduate degrees and certificates annually, including 3 000 Master's level degrees and certificates, 700 professional doctorates, and 300 Ph.Ds.

Interrelationship of Research with Graduate and Undergraduate Education

Recent discussions in California have made it abundantly clear that faculty from each of the post–secondary segments see some form of research as appropriate and enlivening for students and faculty alike. Whether engaged in research that is defined as "instructionally–related" or as the discovery of new knowledge, few faculty view the relationship between research and teaching in the antithetical terms used by non–academic critics. The task of the next few years will be to give concrete curricular expression to the interrelationship of these functions.

Chapter 4

EDUCATIONAL EQUITY

With the proportion of California's ethnic and racial minorities increasing dramatically, the issue of equity dominates its educational horizon. Its colleges and universities are faced with the challenge of diversifying their student bodies and faculties to reflect the composition of the state's population, while maintaining high standards of quality in student admissions as well as faculty teaching and research. The problem of ensuring full participation in society for an ever–increasing number of minorities is not, of course, simply one of educational preparation. It is a social, economic and political challenge to the entire state; but the burden of providing social mobility — particularly for immigrants — has traditionally fallen on educational institutions.

Educational Equity for Students

California faces dramatically changing demographics. Today's minority groups are projected to constitute 52 per cent of the school–age population in the year 2000. These projections indicate that ethnic minorities will increase their proportion of California's population by between 8 and 12 per cent over their 1980 representation. Asian and Hispanic populations will grow most rapidly, but the Black population will increase steadily in comparison to the White. While the state's population growth, based on fertility rates and immigration, can be forecast with relative certainty, projections for college–going rates by ethnic groups are more problematic, since they must be based not on projected demographic changes but also on those in students' educational plans, their high school graduate rates, their University and State University eligibility rates, and on their enrolment and retention rates.

More Asian and White high school graduates achieve eligibility than the 12.5 per cent and 33.3 percentages established by the Master Plan, while Black and Hispanic graduates are eligible at rates substantially below those levels. In 1986, half of Asian public high school students were eligible for either the University or the State University — 33 per cent for the University and 50 per cent for the State University. White students were eligible at an overall 16 per cent for the University and 47 per cent for the State University. Among Black students, in contrast, less than 5 per cent qualified for the University and 11 per cent for the State University. The Hispanic pool was marginally better, with 5 per cent eligible for the University and 13 per cent for the State University.

Beyond theoretical eligibility rates, the most discouraging figures are actual participation rates: these differ dramatically by ethnic group, with Asian students performing above expectation, White students not far behind, and Black and Hispanic students badly underrepresented. Low numbers of minority students graduating, low percentages eligible for admission to public

universities, and low proportions of them enrolling in the system of higher education represent a serious state policy issue.

Trends in Equity Programmes

California's approaches to equity have changed emphasis over the last two decades, even as its demographic pressures have intensified. When first raised as an overarching state issue in the 1970s, educational equity led to the establishment of "special action" admissions programmes, typically stipulating that a certain percentage of each entering class could be composed of students who did not meet the published admissions criteria but who gave promise of future attainment. These Californian efforts shifted later, fuelled by changing demographics, to focus on improving the preparation of students in the public schools. These new efforts coincided with the national movement to reverse what was seen as an "alarming deterioration" in American elementary and secondary schools. Initiated by *A Nation at Risk* — a report by the National Commission on Excellence in Education, U.S. Government Printing Office, 1983 — this movement produced numerous studies pointing to the loss of coherence in the curriculum, decline in the status of teachers, and the lack of rigour and the consequent decline in standards.

California launched its own public school reform movement in 1983. This movement has involved contributions by the post–secondary segments that have increased steadily in recent years. Perhaps the greatest change in the state's vision of educational master planning has been the widening perception by those in government and higher education and by the general public that post–secondary institutions must play a key role in such reform.

Intersegmental efforts at school reform grew logically from faculty concern for the preparation of college–bound students. The first of them, "Statements of Competencies", in several basic academic disciplines, are being prepared by faculty representatives from the three public higher education segments and the public schools as a continuing project. These efforts will benefit all college–bound students, but it is hoped that they will increase the number of minority students now eligible for entrance to the University and to the State University.

Each of the segments has fostered projects under its own aegis and intersegmentally to improve public school preparation. These efforts are so numerous that a recent catalogue of them exceeded 100 pages. One such project, the California Writing Project, is a collaborative university–school staff development programme that involves all segments of higher education with the public and private schools in California. Its goal is to improve student writing by improving the teaching and uses thereof at all grade levels of instruction.

Under–preparation at the post–secondary level has also been attacked at virtually every institution. Faculty and administrators have revised institutional offerings based on the realities of poor student preparation facing them in the classroom. There has been a major expansion of remediation as each segment in its own way offered courses and services designed to help students attain expected levels of competence that would enable them to complete regular undergraduate courses satisfactorily.

Other approaches have been to target programmes specifically for underrepresented minority students, and to strengthen the transfer function. A good example of a targeted effort is MESA (Mathematics, Engineering, Science Achievement) designed to help these students enter and complete mathematics and science–based college courses of study. The post–secondary segments have tried to increase minority student participation throughout post–secondary education, most recently by improving connections between community colleges and four–year institutions. Much of this collaborative effort, and indeed the impetus for the recent Master Plan review, has been

reducing the number of students transferring from community colleges to the University and the State University. To reverse and to continue to improve this record will be one of the most important items on the post–secondary educational agenda. A likely approach will be to concentrate on co–operative efforts between the four–year segments and the community colleges. Efforts are likely to build on the faculty–to–faculty collaborative interactions, the creation of a common "core curriculum" of general education courses, and streamlined transfer mechanics.

Using 1985 data, the Student Aid Commission found that family income for students at independent institutions averaged $39 000, while that for students at the University was $42 000, and $36 000 for students at the State University. Thus, independent institutions do provide education for families with low income. But beyond this contribution, they have also made explicit commitments to recruit and retain students from minority populations. As a measure of some success, the AICCU has noted that graduation and retention rates for Black and Hispanic students are comparable to the rates for White students.

The Faculty Side of Educational Equity

For post–secondary institutions to serve as hospitable environments to those without a tradition of participation in academic life, it requires special efforts to improve the quality of instruction and services for an increasingly diverse student body. It means, for example, teaching students through very different learning styles.

Minority and women students tend to be more successful academically when they have good examples on which to model themselves, and when they have faculty members who take time to mentor and sponsor them. Faculty renewal and replacement offers the greatest hope for future incorporation of significant numbers of underrepresented minorities in academia. The best opportunity for accomplishing this first phase is an historic hiring "window of opportunity" that will open over the next 15 years. During this period, a turnover of some 40 per cent of current academic positions is expected nationally and in California; this may provide the opportunity to infuse the professoriate with significantly larger numbers of women and minorities. Projected turnover rates range from 39 to 54 per cent for the University, 73 per cent for the State University, and an indeterminate but undoubtedly large percentage for the community colleges.

The demand side does not tell the whole story, however. In order to replenish faculty ranks, there must be a supply pool of candidates for academic careers. Projections of the likely number of Black and Hispanic candidates may be calculated by looking at birth rates, immigration, school retention and graduation data, college–going rates, persistence, and completion rates for advanced degrees. Taken together, the picture these calculations present for the future is not encouraging in terms of student enrolment and retention, or of faculty hiring and retention.

While institutional data do not easily lend themselves to comparisons among the three segments, it is clear that over the last decade or more, the numbers of women and of minority faculty have increased, yet their proportions have shown only minimal change. Data suggest that women and minorities at the University and the State University are concentrated at the lecturer and instructor ranks, not in tenure–track positions. Moreover, they tend to be represented primarily in the social sciences and the humanities. At the community colleges, although White women and Asian men and women have made the greatest gains among tenured faculty, on the tenure ladder Black women and Hispanic men have suffered the greatest losses. Currently concentrated at the non–tenure track levels and in particular fields, women and minorities are not likely to move up the academic ladder rapidly in the proportions necessary to reflect the changing demography.

These difficulties are not limited to Californian institutions. Statistically, the University is doing as well or better than its comparison institutions across the country. In fact, all three

segments have been working for some time, individually and in concert, to remedy underrepresentation as well as the problems described above. University programmes include a post–doctoral fellowship programme which brings in women and minority faculty from across the country to increase their scholarship and publications; a pre–tenure programme which permits recently hired underrepresented faculty to have released time for scholarly work; and a target of opportunity programme which allows an additional faculty position to departments which identify outstanding underrepresented faculty to hire. The State University supports released time to faculty to allow upgrading of scholarly qualifications for tenure; administrative fellowships provide internships in leadership positions for faculty and staff; and educational equity awards supporting innovative pedagogy encourage academic development of women and minority students.

Progress towards employment equity has been limited but there are some positive trends. More and more minority students are eligible for the University and the State University as first–time freshmen. Increased numbers of community college transfers will raise the numbers, and efforts to retain talented women and minority junior faculty should also gradually increase their numbers among tenured faculty.

Chapter 5

CALIFORNIA COMMUNITY COLLEGES

The community colleges are in a sense California's contribution to higher education. These institutions started in California in the early part of the century and then spread throughout the nation. Nowhere have they developed more extensively than in this state. Directly or indirectly, they affect the lives of all Californians. Surveys reveal that half of all adult Californians attend a community college at some time. Millions of Californians have availed themselves of the variety of services and the hundreds of programmes offered in the system. In fact, the rate of attendance at California community colleges is the highest in the nation, roughly four times the national average. Californians attend community colleges to prepare themselves to transfer to upper–division programmes in four–year institutions, to learn a skill or trade with employment as their ultimate goal, to retrain after having lost a job, to acquire basic language and mathematics skills, to pursue cultural enrichment, and to explore educational and career goals. The 106 colleges in the system are widely dispersed and readily accessible to residents of the metropolitan areas where the bulk of California's population resides.

Changes of Purpose and Mission

Programmes offered in the community colleges, here and elsewhere, have changed substantially from the focus on two–year transfer education that characterised the early junior colleges. These changes have, in many instances, mirrored changes in society. As a result, community colleges have become the most comprehensive of all post–secondary education institutions.

In the initial phase of the recent review of the Master Plan, attention focused entirely on the community colleges, and heavily on the two areas of mission and quality. The Commission for the Review of the Master Plan concluded that the mission of the colleges was to provide access and success in post–secondary education. With regard to function, the Commission concluded that transfer and vocational education were the central functions of the colleges. Subsequently, reform legislation was enacted which identified these two functions as primary to the segmental mission, while stipulating that remedial education, English as a second language, non–credit adult education, and support services were "important and essential" functions.

Shifts in Programmes and Enrolments

California's community colleges offer 400 different kinds of academic programmes, ranging from computer–assisted drafting to English. The statewide distribution of enrolments among

major disciplines shifted substantially between 1963 and 1982 towards occupational education, with relative declines in humanities and social science enrolments. It is estimated that nearly half of community college course work is in the transferable liberal arts and sciences, one–third in occupational education, 8 per cent in remedial education, 7 per cent in non–transferable general education, and 5 per cent in community or continuing education. Altogether, two–thirds of the 73 000 community college courses offered for credit are transferable to a four–year institution.

California's community colleges are open admission institutions: any adult who can benefit from instruction, or any individual with a high school diploma can attend. The demographic characteristics of the students tend to mirror those of adults in the larger society.

After steadily increasing in the 1960s and '70s, college enrolment rose sharply in 1973, due in part to Vietnam veterans and to the economic recession. After 1976, college–going declined significantly among men and, for the first time, enrolment of women exceeded that of men. A substantial drop occurred in 1978 in the aftermath of the passage of Proposition 13. Again fuelled by economic recession, enrolments reached their peak in 1981 (1.43 million systemwide), only to decline immediately thereafter. While the Californian population has increased by 12 per cent since 1980, community college enrolment has decreased by 11 per cent. At the beginning of the decade the colleges served one in twelve Californian adults. Now they serve one in 17.

The racial and ethnic backgrounds of community college students are comparable to those of all Californians, except that Asians are overrepresented and Hispanics are underrepresented. Among community college students, Asians comprise 16 per cent, Blacks 7 per cent, Hispanics 14 per cent, and Whites 63 per cent. While the average age of community college students is 27, 45 per cent of all students are within the traditional college–going ages of 18 to 24. One in ten students is over 50 years of age. Blacks and Asian students report the lowest incomes, while Whites report the highest. Three of every five community college students are self–supporting. One–fourth of students are enrolled full–time.

Racial and ethnic minorities make up 15 per cent of the faculty, one–fourth of the administrative staff and one–third of the classified staff. There has been little change since the early 1970s in the proportions of minority faculty. By contrast, there were major increases in the employment of minority administrators and classified staff during the 1970s. Data for 1987 indicate that men comprise 63 per cent of full–time faculty, 57 per cent of part–time, and 72 per cent of certificated administrators. Overall, the age of the faculty is increasing. Among full–time faculty, one–half will have reached the (average) retirement age of 62 by the year 2000.

Governance

Because the first "junior colleges" emerged from the high schools, the early statutory roots of governance tied the colleges to the local high school districts and to the law which governed them. They did not develop fully as separate and distinct entities until after World War II, when the state's population expanded rapidly. By 1959, 28 of the 56 junior college operations were separate entities. However, the high school connection lingered on in many laws governing them. Thus, at the time of the Master Plan, the colleges were taking on most of the appearances of institutions of higher education, but were still firmly and legally part of the public school system.

With the Master Plan, the colleges were made part of higher education, although they also remained legally part of the public school system in order to receive federal money for vocational education. They were left as locally–based and –governed agencies, but they were drawn more into the state system because of their inclusion in the co–ordinating agency membership, and of the specific provisions relating to transfer, for example. Their governance structure remained

decentralised. They were governed by a Board whose primary responsibilities were elementary and secondary education, and were subject to extensive supervision and control by the Legislature.

Dissatisfaction with the governance arrangements led the Legislature, in 1967, to create the separate Board of Governors to regulate the community colleges at the state level. In 1969, the Legislature gave broad responsibilities to the board, but left intact all existing legislation assigning powers to local boards. At the conclusion of its study, the Commission for the Review of the Master Plan recommended the creation of a community college system, administered as a unified state–local system, with the board of Governors having broad management and policy–making powers in financial and academic affairs. These proposals for a considerably more centralised system have not been endorsed by the Legislature, which has moved more in the direction of keeping the present structure but clarifying the respective mandates.

Finance

At the time that Proposition 13 was passed by the electorate in 1978, funding for the community colleges was a mix of state and local funding, with local property taxes providing the bulk of the funding. Proposition 13 sharply curtailed the taxing ability of the local districts: revenues were reduced by half. Because of the tremendous loss of local tax base and revenue, the state assisted the community colleges and many other local agencies by providing assistance from the General Fund. Community college provision went from $473 million in 1977–78, to $795 million in 1978–79, and to $902 million in 1979–80. Before the Legislature acted to regularise the funding, some colleges were forced to cut back on programmes and absorb enrolment losses in order to live within reduced levels. As a reaction to the growing burden of the new state responsibilities, cost containment on enrolment growth was put in place, and enrolment above budgeted levels was not financed. In 1980–81, there was a $50 million deficit for the colleges due to unfunded enrolment. Later, the Legislature eliminated state support for "avocational, recreational, and personal development" courses. In 1983, the Legislature reduced support for community college non–credit enrolment to bring the level of funding into line with that provided to the public schools. In 1983, a new $50 per semester student fee, or tuition, was instituted. Possibly as a result of the fee or of various uncertainties, enrolments sagged 11 per cent the first year. In fact, enrolments went from 1 206 000 in 1981 to 982 000 in 1984.

Lacking concrete proposals for a new funding mechanism, the Legislature has extended the current community college arrangements until July of 1991. However, the Legislature has established a new procedure for allocating state funds to these districts. Known as programme–based funding, the system allows allocation of funds to college districts based on various workload measure and funding rates related to programmatic differences. Also, provision is made for more than $100 million in additional appropriations over a two–year period. Once the two phases in stepping up funding are accomplished, a variety of reforms will be set in motion. So, substantial reform has been enacted as a result of the last few years of community college review and evaluation, but true implementation of these efforts must await complete funding.

Chapter 6

AN AGENDA FOR HIGHER EDUCATION

The major issue for Californian education for the foreseeable future is achieving both equity and excellence. This challenge, which subsumes the issues of access and success, requires modifying the collegiate student body and professoriate in California's higher education in such a way as to reflect the diversity of the state's population, while preserving high standards of quality in student admissions and faculty teaching and research.

To achieve equity while maintaining excellence will be enormously difficult and costly. One reason why such comparatively little progress has been made in the effort up until now is that the challenge has been approached as if it were primarily higher education's problem and that its solution could be achieved through conventional affirmative action programmes. In fact, the problem is social, economic, and political in nature, extending from early childhood through the lower grades and high school years into college and graduate school. The systemic and structural character of this problem requires that efforts to solve it be carefully co–ordinated, involving both separate and collaborative programmes in the public schools and higher education, backed by solid political and financial commitments by the state's elected officials, policy–makers, and the public. Anything short of this broad and integrative approach will almost surely fail.

Co–operation with the Public Schools

In order to achieve the racial and ethnic diversification of higher education and to assure the requisite growth in an internationally–oriented and knowledge–based economy, it will be necessary that higher education and public school leaders redouble their co–ordinated efforts, and accomplish a series of interventions and innovations. Among the most pressing of these are the following:

- — In the early elementary grades, every effort should be made to identify and provide special support to academically promising children from underrepresented groups.
- — Special counselling of these students and their parents should seek to orient the children towards college–preparatory courses beginning in the ninth grade.
- — These youngsters should be closely monitored through high school by personnel specially trained to provide academic support, encouragement, and orientation for college–going.

Faculty Replacement

By the year 2000, California will need to replace at least one–third of its faculty in higher education. This task will constitute a massive challenge to colleges and universities to maintain

and enhance instructional excellence. Replacement of a major proportion of the professoriate should present an extraordinary chance to recruit minority students into the profession and thus have a substantial impact of ethnic and racial balance. Without radical changes and new interventions, however, the percentage of Blacks and Hispanics in the profession in the years 2000 or 2010 will be improved only marginally over present numbers. The "window of opportunity" will remain closed unless we take steps to open it wide to minority candidates. Among needed actions are:

— Academics trained to provide a sustaining environment should closely mentor underrepresented college students beginning in the freshman year.
— The costs of graduate education for qualified needy students preparing for college teaching should be fully underwritten.

Teacher Education

Just as higher education must replace a major proportion of its faculty, colleges and universities must actively recruit and train large numbers of minority and other students to serve as public school teachers. At least 90 000 replacement teachers will be needed by the year 2000. This major task is made greater by the clear need to train substantial numbers of underrepresented minority teachers. To accomplish the desired end, colleges and universities must intensify research into the teaching and learning process so that models for success can be identified. Additionally, institutions need to explore more systematically the uses of educational technology in these settings.

Student Financial Aid

Rising college costs cause particular concerns among underrepresented students and their parents about their ability to pay for their education. The continuing trend towards loans and away from grants seriously impacts students, who must start their careers with large debts which adversely affect their choice of job and profession. Therefore:

— The relationship between loans and grants, scholarships, work, and forgiveness provisions needs considerable attention.
— The state should guarantee that the costs of the college education of all academically qualified, financially needy students will be met.
— This commitment should then be widely disseminated to late elementary and junior high school students and their parents.

The Community Colleges

Since the adoption of the Master Plan, the community colleges have been the first point of entry in the public system for most Californians, among them a growing number of ethnic minorities and women. Although historically the colleges have been highly successful in providing wide access, in recent years disturbing signs of instability have been evident within the system in terms of financing, enrolments, and governance. It is imperative that stable financing and more clearly articulated governance be assured so that the energies of the system can be directed to the educational issues linked to equity and excellence. All segments should work with the colleges to make

the transfer function a more effective vehicle for access, and assist all efforts to strengthen the colleges, including the removal of barriers to transfer.

Economic Development

In the closing years of the 20th century, an excellent system of higher education is a necessity that contributes exponentially to building the economy and assuring a high standard of living. Thus, graduate education with adequate facilities for research and study must be a pre–eminent priority on the state's agenda. Institutions need to establish effective links with the business community and to provide educationally sound programme support whenever possible. Educational technology applied to the requirements of business may give the colleges and universities new tools to cater to emerging needs. Above all, the goals of excellence and equity must not be seen as antithetical to competitiveness but as being complementary to it.

We cannot say with precision what the job market will look like at the turn of the century, but we can say with considerable confidence that the economy then will require citizens trained flexibly at high levels of skill. As we make the transition to that new economy, we will need to establish the primacy of education in the goals of the state. The importance of education must be realised in concrete terms — for example, by according high social and economic status to students and teachers who excel. The achievement of these goals will require far more than the efforts of post–secondary education alone: political and business leaders must be deeply involved in this commitment. It will be a costly venture, but the alternative is failure at incalculable cost to all levels of Californian society, and to the nation.

California has made historic commitments to quality, mass education in this century, with success that has not gone unnoticed in other states in the nation. Once again, Californians must be called on to make substantial investments in the future, mindful of the fact that the sacrifices and commitments of two and three decades ago have proven to be the priceless assets of today's society and economy.

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